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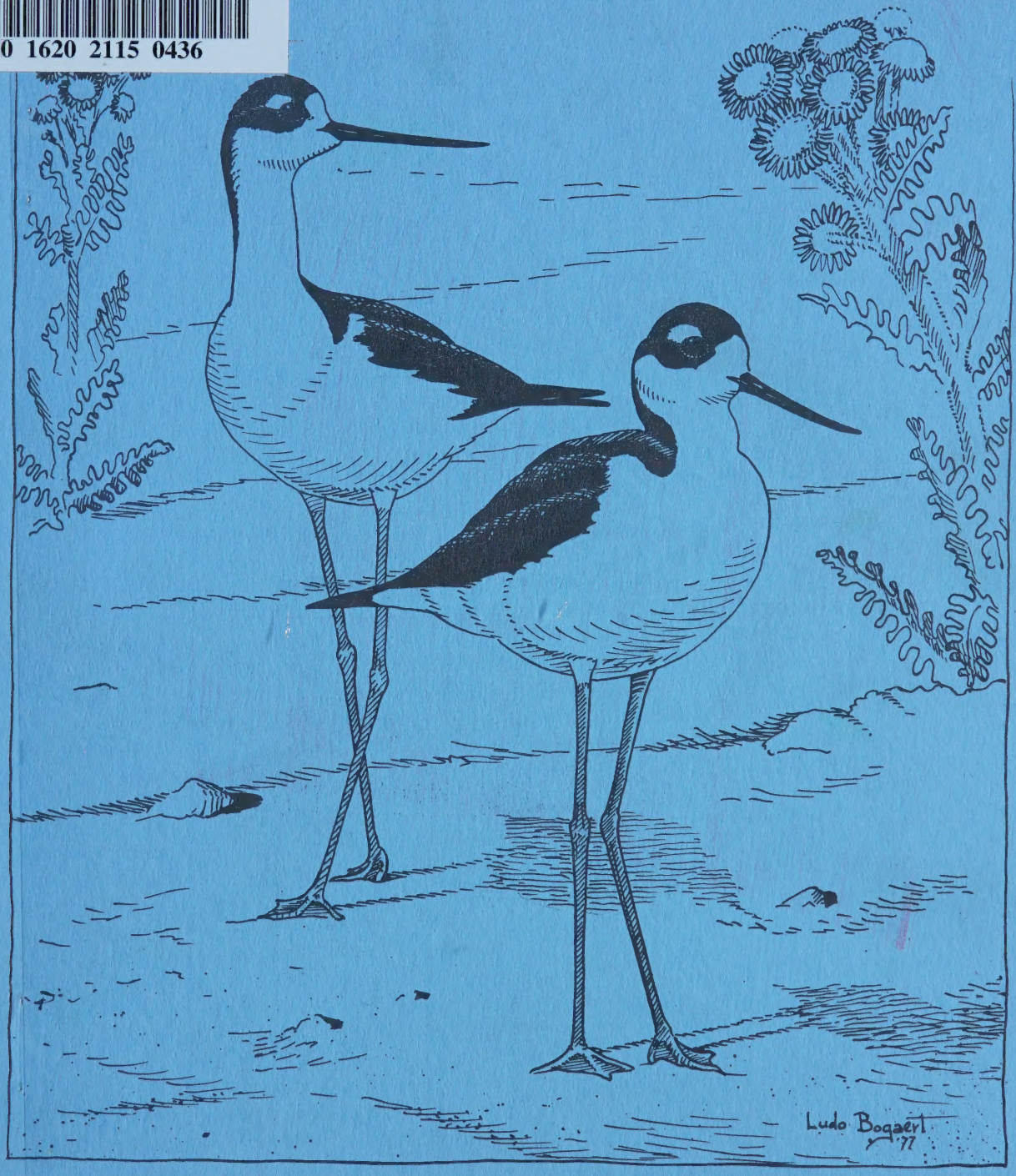

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ALBERTA NATURALIST

VOLUME 9 NUMBER 2 JUNE, 1979

TABLE OF CONTENTS

Cover: Black-necked Stilts, by Ludo Bogaert, a well-known Edmonton artist

ROBERT LISTER, EDMONTON'S BIRDMAN: RECIPIENT OF FOURTH LORAN L. GOULDEN MEMORIAL AWARD, by Martin K. McNicholl 61

PHOTOPERIODISM IN BIRDS, by Robert Lister 63

THE QUESTION MARK - ANOTHER "EASTERN" BUTTERFLY NEW TO ALBERTA, by Charles D. Bird 66

ARRIVAL AND DEPARTURE DATES OF THE BIRDS OF THE FT. MCMURRAY, ALBERTA, AREA, by J.R. Gulley 67

SKIPPERS AND BUTTERFLIES OF A PRAIRIE FARM, by Norbert G. Kondla. 71

THE YELLOW VIRGINS-BOWER (CLEMATIS TANGUTICA) IN ALBERTA, by Daniel F. Brunton 76

PROCEEDINGS OF THE A.O.R.C., WINTER 1978-79 78

HIGHLIGHTS OF WINTER, 1978-1979, BIRDS, SOUTHERN ALBERTA, By Rudi Butot 79

COMMENTS ON GREAT BLUE HERON COLONY CENSUS METHODS, by Rudi Butot 80

WEEDY PLACES AND THE WESTERN IRRIGATION DISTRICT, by Kevin Van Tighem 83

OPPORTUNISTIC PREDATION BY A BLACK-BILLED MAGPIE ON A COMMON STARLING IN CANMORE, ALBERTA, by D.F. Brunton. 85

COVER STORY: BLACK-NECKED STILTS NESTING IN ALBERTA, by Ludo Bogaert 86

NORTHERN SHORT-HORNED LIZARD IN SOUTHEASTERN ALBERTA, by Bruce J. Milner. . . . 90

NATURALISTS' BOOKSHELF: Life Strategies, Human Evolution, Environmental Design. Toward a Biological Theory of Health, written by Val Geist, Reviewed by R.M. Fisher. 92

ADDITIONAL NOTES ON THE BIRDS OF THE KANANASKIS FOREST EXPERIMENT STATION AND SURROUNDING AREA, by John M. Powell. 94

RECENT PUBLICATIONS ON THE NATURAL HISTORY OF ALBERTA, Compiled by David Ealey 98

FAN NEWS. 100

PRESIDENT'S PAGE. 102

EDITOR'S PAGE 103

CLUB NEWS 104

NOTES AND NEWS. 106

CONSERVATION NEWS 106

REQUEST FOR INFORMATION 107

JUNIOR NATURALISTS' PAGE:

THE WILD ROSE, by Lisa Schmidt 108
THE WOLF, by Daniel A. Morris 108
OWL HIDEAWAY DISCOVERED, by Fred Schutz. 111

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ERRATA, VOLUME 9 NUMBER 1

p. 27, top photo labelled "Mule deer female", should read "Mule deer male";

p. 27, bottom photo unlabelled, should read "Hoary Marmot"

DEADLINES for submission of material are: January 15, April 15, July 15 and October 15. Details at end of this issue.

IN COMING ISSUES

- Pre-mating Behaviour of the Prairie Rattlesnake (Crotalus viridis viridis) in Southeastern Alberta, by Bruce J. Milner
- The Woolly Lip-fern (Cheilanthes feei Moore) in Alberta, by Daniel Brunton
- Small Mammals Trapped in the Fort McKay Area, 1977, by Wayne W. Smith
- Snow Algae: A Study from Highwood Pass, Alberta, by Linda Olson
- Some Elements of Amphibian Distribution and Biology in the Alberta Rockies, by Jim R. Salt

ROBERT LISTER, EDMONTON'S BIRDMAN: RECIPIENT OF FOURTH LORAN L. GOULDEN MEMORIAL AWARD

by Martin K. McNicholl
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The late James L. Baillie led us over a barbed-wire fence on to a path bordering the marsh. Green Herons and Common Gallinules were special treats to those of us from western Canada. As I stopped to admire yet another Green Heron, the man with whom I had been walking and talking for the past 20 minutes identified himself. I was delighted to be able to put a fact at last to the familiar name of Robert Lister. The meeting took place in August of 1967 near Toronto on a field trip at the end of the American Ornithologists' meeting there. Bob had little reason to remember it, but I had several reasons. Roger Evans, for whom I had worked that summer and who was later my M.Sc. supervisor, had spoken highly of Bob when remeniscing about his student days at the University of Alberta. Vere Scott had spoken of Bob's hospitality when he (Vere) had worked at Al Oeming's game farm. I had read Bob's seasonal summaries on the Northern Great Plains in Audubon Field Notes, and knew of the help Bob had been to his successor, David Hatch. My impression from these fellow Manitoba naturalists was that Bob was a man knowledgeable in birds, inclined towards hospitality, and abundantly kind. I have had no reason to change any aspect of that impression since moving to Alberta in 1971.

Bob Lister was born in Norfolk, England, in 1902, where he first became interested in birds. In 1920 he moved to Edmonton, where he studied at Alberta College (now St. Stephen's College). He commenced work as a technician in 1923 with the Zoology Department at the University of Alberta. He remained at this job until 1966, when he retired. During most of that time he was the indispensible assistant to the late William Rowan, Professor and for some time Chairman of the department. Rowan became famous for his work on the influence of photoperiod on annual cycles in birds, especially migration. Although Bob published little during this period, he deserves much of the credit for many of Rowan's publications at that time.

In addition to his contributions to science through his work with Rowan, Bob has published a number of articles and papers, listed at the end of this article. A particularly important publication on the birds of Beaverhills Lake, based substantially on Rowan's field notes, awaits publication. This book is an official project of the Edmonton Bird Club's "Operation Spendthrift". A grant from the Clifford Lee Foundation will probably support publication costs. In my opinion, however, Bob's most important writing is his weekly column on birds in the Edmonton Journal. Through this column, Bob manages to help novice birders, inform more seasoned observers of current birding events, and stimulate interest in the general public, all on a weekly basis. The indirect benefits to conservation of such columns cannot be measured readily, but must be very substantial.

In 1948 Otto Hohn suggested to Bob that a bird club might be a good thing for Edmonton. Bob had some reservations at first, but he and Otto advertised in the Edmonton Journal. They had 20 replies, leading to the formation of the Edmonton Bird Club. Bob's work for the club over the years since has resulted in his current position as Honourary President. In 1929 Bob moved into the house of 11115 84 Avenue at which he and his wife, Joan, entertained after the bird club meetings each month the club met for many years, until they moved two or three years ago. These "beer"

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sessions were long the social tie which bound members together, and were Loran Goulden's social event of the month. Bob and Joan also entertained numerous Audubon film speakers, and thus over many years built up a long list of friends which reads like a "who's who" of North American (and European) ornithologists. Bob has travelled widely to American Ornithological Union and International Ornithological Congress meetings. These trips and his many experiences in Alberta, especially in his many years of association with his eccentric boss, have supplied Bob with a long list of stories - and he is a superb storyteller.

When the Loran L. Goulden Memorial Award Committee was formed, we decided that the first award should recognize not only outstanding contributions to the study of nature in Alberta, but also a substantial contribution to Loran's own development as a leading naturalist in his newly adopted province. There were only two serious contenders - Dick Dekker and Bob Lister. We finally decided that Dick's time in the field with Loran should be recognized by the first award. However, we intended to recognize Bob's outstanding role in encouraging Loran early in the history of the awards. In addition to the "beer sessions", Loran visited Bob frequently and phoned him almost daily to find out information, report observations, or just chat. Bob was always receptive to Loran's rather time-consuming demands and I always felt that Bob was a key person in sustaining Loran's boundless enthusiasm. One of Loran's greatest thrills was when the Listers and the Heaths agreed to attend a surprise birthday dinner for Loran. Loran's enthusiasm and excitement that evening (and talking about it for days after) matched his excitement over seeing a rare bird at Beaverhills Lake. Thus, Gwen's choice of Bob as a participant in the memorial service for Loran at Mayfair Park was particularly fitting.

Bob will no doubt continue to write occasional scientific papers. Bob and Joan will continue to entertain. But Bob's greatest contribution flows weekly from his pen. His bird column will continue to spark new interest, to encourage and stimulate novices, and to inform the seasoned. Every once in a while, the spark started or sustained by one of Bob's columns will erupt into the sort of enthusiasm shown by Loran Goulden. But Bob will never meet most of the people he has benefited, and most of his contributions will never be known to him. His overall contribution has not gone unrecognized, however. In addition to his position as Honourary President of the Edmonton Bird Club, he was made an Honourary Life Member of the Edmonton Natural History Club - in fact the motion for this was one of Loran's first actions as a board member of ENHC. Bob was also given the first annual award of the Edmonton Bird Club for outstanding work on birds in the Edmonton area. He is the first recipient of the Loran L. Goulden Memorial Award to have received both these awards. Clearly, Bob Lister is a highly deserving recipient of both.

PUBLICATIONS BY BOB LISTER

Lister, B. 1951. Trumpeter Swans breeding in the Cypress Hills of Alberta. Can. Field-Nat. 65: 157-158.

Lister, R. 1963. Bird finding in Alberta. I. Central and northern Alberta. Can. Audubon 25(2): 44, 49-50.

Lister, R. 1962-present. Bird column. Edmonton Journal, weekly.

Lister, R. 1964-1965. (seasonal bird reports). Northern Great Plains region. Audubon Field Notes 18: 460-464; 515-519; 19: 48-53; 388, 392, 395.

Lister, R. 1967. Observations on embryos of Common Loons. Auk 84: 124.

Lister, R. 1973. Northern records of the Mockingbird in Alberta. Can. Field-Nat. 87: 324.

Lister, R. 1973. Unusual winter movements of Common Ravens and Clarke's Nutcrackers. Can. Field-Nat. 87: 325-326.

Lister, R. 1975. Common Redpolls nesting at Edmonton, Alberta. Can. Field-Nat. 89: 64-65.

Lister, R. 1977. A trip to Beaverhill Lake in spring: an excerpt from "Beaverhills Lake, a wonderland of birds". Edmonton Naturalist 5: 154-155.
Dekker, D., R. Lister, T.W. Thormin, D.V. Weseloh and L.M. Weseloh. 1979. Black-necked Stilts nesting near Edmonton, Alberta. Can. Field-Nat. 93: 68-69.
Lister, R. 1979. Photoperiodism in birds. Alberta Nat. 9(2): 63-66.

PHOTOPERIODISM IN BIRDS

---

by Robert Lister
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For the past while I have been engaged in writing a manuscript on the Birds and Birders of Beaverhills Lake. Much of this work has been based on the field notes of the late Dr. William Rowan, famed ornithologist and for almost forty years Chairman of the Department of Zoology at the University of Alberta. I was associated with him both in the laboratory and the field for almost all of that time.

Professor Rowan was born in Basle, Switzerland, but was educated in England where he obtained his M.Sc. at University College, London. He was to return there later to receive his Doctorate in Science for outstanding work on birds that was conducted in Alberta. It was these studies that were to make his name known throughout the scientific world and they form the basis of this article.

As a student, Rowan spent one or two summers at Blakeney on the north coast of Norfolk, England. He had had an interest in birds since he was a young boy but it was probably here, amid the tern colonies on the sand and shingle and the multitudinous flocks of shorebirds that thronged the saltings and mud flats in spring and fall, that he gained his first interest in bird migration.

Rowan arrived in Edmonton in the autumn of 1920 and at once looked around for a place where he could study and collect birds. He was told of a place on the south shore of Beaverhills Lake known as Francis' Point.

He was intrigued with the place from the start and for the rest of his life he spent much of his leisure time hunting waterfowl or collecting other birds on its shores.

He found the Point with its sand and teeming waders reminiscent of Blakeney and again marvelled at the regularity with which birds returned each spring. The first Canada Geese, Mallard and Pintail ducks almost invariably arrived during the last few days of March at which time Crows were cawing over the flats and early Meadowlarks were giving their cheery songs from fence posts. Small birds such as Juncos and Tree Sparrows showed an almost equal regularity although they might be delayed a few days by inclement weather on their route. He looked around for some factor or factors that might govern this migratory pattern.

Temperatures and barometric pressures he discarded for they were too variable from year to year. The only constant, it seemed to him, was the seasonal change in daylength. Light, he thought, might be the source that set the migratory pattern.

He realized that spring migration in birds was closely tied to the breeding cycle and he thought light might have some effect on the birds' reproductive organs. He de-

cided to subject birds to increasing lengths of light to simulate the lengthening days of spring. The bird chosen for the initial experiments to test this theory was the Slate-coloured Junco.

The sexual cycle in birds shows a dramatic increase in size and development of the gonads as the breeding season approaches. After the young have hatched there is a corresponding decrease so that birds the size of the junco may have testes as large as peas in spring but scarcely bigger than pin heads in winter. Female organs show a similar development and decline. Rowan decided to catch birds on fall migration, hold them until their gonads had reached a minimum, and then subject the birds to light.

The juncos caught in late September and October settled down well in captivity. A double aviary was built in the Rowan garden. One half was equipped with electric light, the other had no illumination other than the light of day. All of the birds were banded and approximately two thirds of them were placed in the first aviary while the rest, the control birds, were kept in the unlighted half. Neither cage was heated in any way and except for the back and centre where they joined, were open to the weather.

The first aviaries were built in 1924, and lighting started in November. The lights went on at sunset and remained on a little longer each succeeding day.

Samples of both experimental and control birds were taken at intervals and I remember the excitement when it soon became evident that light was having a dramatic effect on the genital organs of the birds. By January the experimentals appeared to be in a near breeding state while the controls remained in much the same condition as they had been when the experiment started.

This manipulation of the birds' sexual cycle by means of light was new to the scientific world and opened up a new field of avian biology. It brought Rowan world-wide fame.

But he was not satisfied. He now reasoned that if the gonads of birds are brought to a near breeding state as they are when the birds leave their wintering grounds, they might move farther north no matter where they were released. Conversely, he argued, birds with the sexual organs at the minimum stage of their development should have lost the urge to migrate and should remain sedentary even if turned loose in Alberta in the depths of winter.

To test this hypothesis the experiment was repeated and the birds were released in January when the experimentals' gonads were in an advanced state of development. The controls were freed at the same time.

The results were inconclusive. Most of the control birds that did not fall prey to cats or Northern Shrikes were retaken in traps set near the aviaries. Some 60 per cent of the experimental birds were captured in like manner. The rest disappeared but how or in what direction was not known.

The junco is a small bird, unknown to many people and is easily overlooked. In addition, it was protected in Alberta so it was not possible to ask people to shoot the birds and return the bands.

Rowan decided to repeat the experiments using a large, conspicuous bird, well-known to the general public and one that was regarded as a pest and so could be legally shot. He chose the Common Crow.

The birds were trapped or captured by various means - which makes another story - but finally enough were obtained to make the experiments feasible. The birds were

kept in a large aviary with a reasonable flying distance to keep the crows fit and again the controls were confined in a similar but unlit cage. The crows responded to the light treatment just as the juncos had done. The day of their release was given much publicity on radio and in the newspapers and sportsmen as well as farmers were asked to look for them and shoot the birds if possible. They were released 48 hours in advance of the given date so they should have time to orient themselves.

Returns soon came in but once again the results were not conclusive. Of the experimental birds, of which there were 69, ten were killed near Edmonton, eight were shot to the north and northwest, the furthest a hundred miles away. However, eight were taken in the south and southeast as far away as South Dakota.

After samples had been taken and there had been some mortality in the cage, there were but 14 control birds left. Six of these were recaptured by the aviaries as were several of the experimentals. Two controls were shot near Edmonton, four killed to the southeast of the city, while the other two were not accounted for.

There were, however, during the following winter, reports of crows in the Peace River country, some 300 miles northwest of Edmonton. While ravens are common winter birds of that area and many people cannot tell a raven from a crow, Rowan was convinced that the birds seen were some of his experimental crows. He regretted that birds released in Edmonton, even if they did fly north, would likely be lost since they would have to fly over many miles of wooded and unsettled country where their chances of being seen would be remote. He decided to repeat the experiment but this time release the birds in the southeast of the province, from where, if they did fly north, they must pass over prairie towns and farms.

This experiment was conducted in 1931 and the catch of crows was much better than it had been on the previous occasion. There were now enough birds to allow some to be castrated to see what effect light would have on birds whose sexual organs had been removed. As before, the experimental, unmutilated birds responded to the light and their gonads were well-developed when they were released.

It had originally been intended to fly the birds to Medicine Hat and free them there, and Grant McConachie had been engaged to take them down. Apart from the crows, it was an historical flight. It was McConachie's first commercial venture in the air and he was paid the princely sum of forty-five dollars for it. McConachie went on to become a well-known pilot, and ended up as president of Canadian Pacific Airlines and a Member of Canada's Aviation Hall of Fame.

The weather closed in on the little plane long before Medicine Hat was reached and McConachie, who was flying without instruments, decided to sit down. the Crows were turned out near the little town of Hacket.

Once again there were no definite results. Birds wandered in all directions with experimentals being taken far south in the United States the following winter. Earle B. Phelps, Professor of Sanitary Science at Columbia University, whose opinion was presumably asked, said in a letter to Rowan that from the data submitted to him he could think of no test which demonstrated any tendency on the part of the experimental birds to behave differently from the controls.

But Rowan was undaunted. Time after time for the rest of his life he caught or attempted to catch crows to prove his pet theory that experimental light conditions would induce birds to migrate. Similar experiments have been conducted throughout the world but with no different results than those obtained by Rowan.

It is now known that many factors beside light enter into the complex phenomenon that we know as bird migration and as Wolfson has stated, we must be warned against

any over-simplified explanation for "the total physiological and psychological state of the bird is important in inducing its migratory and breeding behaviour and not the physiological condition of one organ alone". Nevertheless, Rowan earned his place in history by those early experiments that pioneered the study now known as photoperiodism in birds.

THE QUESTION MARK - ANOTHER "EASTERN" BUTTERFLY NEW TO ALBERTA

by Charles D. Bird
Box 165, Mirror, Alberta TOB 3CO

On May 14, 1978, Joe Smith collected a female angle-wing butterfly on Joy Mountain in the Blackfoot Hills, some 12 miles SSW of Lloydminster, Alberta. It was part of a collection he was making for the Entomology course taught at Olds College by Buck Godwin. Mr. Godwin kindly sent the specimen down to me for examination.

The individual was readily identified as Polygonia interrogationis, the Question Mark. With a wingspan of around 60 mm, this is our largest angle-wing. Other distinguishing characters are a distinct white "question mark" in the middle of the hind wings below, a bright reddish brown color above, and violet colored tails that are longer than those of any other Polygonia. The wings are reddish brown above with a number of brown and black spots and areas in the fore wings while the hind wings are a uniform dark brown with a tendency to dark brown spots on a lighter background towards the thorax. The females are brown below with a darker area on the inner half of the wings. Males are variegated below with a number of dark marginal and submarginal lines.

The species occurs from New England west to extreme eastern Alberta, North Dakota, Wyoming and Colorado, north to southern Ontario, Manitoba and Saskatchewan. It is known from only two locations in Saskatchewan: Indian Head (September 5, 1935) and Glen Ewen (July 10, 1970).

Larval food plants are hop, elm and nettle. Nettle is found in the collection area and Mr. Smith informed me that Manchurian elm occurs in the shelterbelt of the nearby farm.

ARRIVAL AND DEPARTURE DATES OF THE BIRDS OF THE FT. MCMURRAY, ALBERTA, AREA

by J.R. Gulley
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The author has had the opportunity to work in the Ft. McMurray, Alberta, area on an avian research project since April of 1976. The project has allowed extensive collection of data on the avifauna of the area. This report deals with the arrival and departure dates for those species encountered. The majority of the sightings occurred on an oil sands lease some 30 km north of Ft. McMurray.

Concentration of observation time ran from April through October in 1976, 1977 and 1978. However, some observations have been made each month since April of 1977. Throughout 1976, observations were made by both the author and Mr. Ken A. Zurfluh.

The format used for most of the observations involve the census of a number of sites on the oil sands lease. All species observed or heard were recorded. The data presented in this article includes the number of sightings made of each species over the three years, therefore, the larger the number of sightings, the more accurate the arrival and departure dates. In cases with only a single sighting, that date will appear in the arrival column.

[Author's note: The data presented in this article was accurate for sightings up to November 1978. The Christmas Bird Count conducted on December 17, 1978, changed the dates for several species. Please refer to the count report, Alberta Naturalist 1979 Supplement, for those changes.]

Species	# of Sightings	Earliest Arrival Date	Latest Departure Date
Common Loon	84	Apr. 25, 1977	Sept. 6, 1977
Arctic Loon	1	Oct. 5, 1977	
Red-throated Loon	1	May 10, 1976	
Red-necked Grebe	14	Apr. 26, 1978	May 30, 1976
Horned Grebe	140	Apr. 24, 1977	Aug. 24, 1977
Eared Grebe	26	Apr. 27, 1978	July 9, 1978
Pied-billed Grebe	25	May 6, 1978	Oct. 3, 1977
White Pelican	1	May 29, 1978	
Great Blue Heron	17	Apr. 28, 1978	Sept. 30, 1978
American Bittern	2	May 14, 1977	May 27, 1976
Whistling Swan	12	May 1, 1977	Oct. 13, 1978
Canada Goose	73	Apr. 5, 1978	Oct. 13, 1976
White-fronted Goose	21	Apr. 29, 1978	Oct. 4, 1977 & 1978
Snow Goose	24	Apr. 23, 1977	Oct. 4, 1976
Mallard	1297	Feb. 20, 1978	Nov. 29, 1977
Gadwall	67	Apr. 27, 1978	Oct. 13, 1976
Pintail	422	Apr. 5, 1976	Oct. 16, 1978
Green-winged Teal	906	Apr. 10, 1976	Oct. 27, 1976
Blue-winged Teal	346	Apr. 9, 1977	Sept. 25, 1976
American Wigeon	732	Apr. 19, 1977	Nov. 29, 1977
Northern Shoveler	604	Apr. 17, 1978	Oct. 25, 1978
Wood Duck	1	May 18, 1977	
Redhead	14	Apr. 24, 1977	Oct. 18, 1977

Species	# of Sightings	Earliest Arrival Date	Latest Departure Date
Ring-necked Duck	233	Apr. 27, 1977	Oct. 3, 1978
Canvasback	15	Apr. 23, 1977	Oct. 27, 1976
Greater Scaup	1	June 1, 1976	
Lesser Scaup	243	Apr. 19, 1977	Nov. 14, 1978
Common Goldeneye	473	Apr. 4, 1976 & 1978	Nov. 6, 1978
Barrow's Goldeneye	1	Apr. 19, 1978	
Bufflehead	401	Apr. 19, 1978 & 1978	Oct. 13, 1976
Oldsquaw	3	May 9, 1978	Oct. 2, 1978
White-winged Scoter	2	May 26, 1977	July 6, 1978
Surf Scoter	4	May 16, 1976	Sept. 15, 1977
Ruddy Duck	45	May 4, 1978	Sept. 8, 1977
Hooded Merganser	1	May 19, 1977	
Common Merganser	94	Feb. 20, 1978	Dec. 28, 1977
Red-breasted Merganser	7	Apr. 27, 1977	May 16, 1978
Goshawk	11	Apr. 20, 1978	Oct. 10, 1976
Sharp-shinned Hawk	61	Apr. 20, 1977	Oct. 3, 1977
Cooper's Hawk	1	May 8, 1976	
Red-tailed Hawk	54	May 9, 1977	Oct. 4, 1976
Broad-winged Hawk	1	May 29, 1977	
Rough-legged Hawk	73	Apr. 19, 1977	Oct. 18, 1977
Golden Eagle	1	Apr. 10, 1976	
Bald Eagle	11	Apr. 13, 1978	Oct. 14, 1977
Marsh Hawk	124	Apr. 4, 1978	Oct. 8, 1976
Osprey	3	May 10, 1976	June 1, 1976
Gyrfalcon	4	May 6, 1977	Sept. 22, 1977
Peregrine Falcon	2	Apr. 29, 1977	May 23, 1978
Merlin	8	Apr. 19, 1977	July 27, 1977
American Kestrel	875	Apr. 4, 1978	Oct. 6, 1976 & 1977
Spruce Grouse	6	Apr. 19, 1977	Oct. 17, 1977
Ruffed Grouse	17	May 14, 1977	Oct. 1, 1976
Willow Ptarmigan	2	Dec. 1, 1977	Apr. 4, 1978
Sharp-tailed Grouse	19	Jan. 30, 1978	Oct. 26, 1977
Sandhill Crane	96	Apr. 19, 1977	Sept. 6, 1976
Sora	173	Apr. 25, 1976	Aug. 20, 1977
American Coot	184	Apr. 19, 1977	Sept. 12, 1977
Semipalmated Plover	69	May 10, 1978	Sept. 21, 1976
Killdeer	998	Apr. 7, 1976	Oct. 4, 1977
American Golden Plover	58	May 13, 1977	Oct. 13, 1976
Black-bellied Plover	25	June 10, 1977	Oct. 14, 1977
Common Snipe	275	Apr. 20, 1977	Oct. 5, 1977
Upland Sandpiper	1	Aug. 28, 1978	
Spotted Sandpiper	774	May 9, 1977 & 1978	Sept. 22, 1978
Solitary Sandpiper	50	May 13, 1976	Sept. 2, 1976
Greater Yellowlegs	125	Apr. 30, 1977	Oct. 17, 1978
Lesser Yellowlegs	738	Apr. 18, 1978	Oct. 18, 1977
Willet	1	May 25, 1976	
Ruddy Turnstone	15	May 25, 1978	Aug. 23, 1977
Sanderling	15	May 25, 1976	Sept. 23, 1977
Semipalmated Sandpiper	118	May 13, 1977	Sept. 8, 1977
Least Sandpiper	62	May 7, 1977	Sept. 3, 1976
White-rumped Sandpiper	9	May 26, 1977	Sept. 17, 1977
Baird's Sandpiper	225	May 7, 1977	Sept. 21, 1977
Pectoral Sandpiper	155	Apr. 30, 1977	Oct. 14, 1977
Dunlin	1	June 3, 1976	
Short-billed Dowitcher	24	May 8, 1977	Aug. 23, 1976
Long-billed Dowitcher	66	May 8, 1977	Oct. 7, 1976

Species	# of Sightings	Earliest Arrival Date	Latest Departure Date
Stilt Sandpiper	63	May 15, 1977	Sept. 13, 1976
Buff-breasted Sandpiper	4	May 28, 1978	Aug. 26, 1978
Hudsonian Godwit	3	May 25, 1978	Sept. 28, 1976
American Avocet	2	May 2, 1977	May 6, 1977
Wilson's Phalarope	111	May 2, 1977	Aug. 22, 1976
Northern Phalarope	25	May 22, 1976	Sept. 1, 1976
Glaucous Gull	4	Apr. 29, 1978	May 24, 1978
Herring Gull	925	Apr. 17, 1978	Oct. 14, 1978
California Gull	709	Apr. 15, 1978	Nov. 6, 1978
Ring-billed Gull	89	Apr. 8, 1976	Oct. 17, 1978
Mew Gull	9	Apr. 30, 1978	July 16, 1977
Franklin's Gull	36	Apr. 21, 1978	Aug. 2, 1978
Bonaparte's Gull	69	Apr. 17, 1978	Oct. 5, 1977
Common Tern	11	May 9, 1977	July 28, 1978
Caspian Tern	1	June 20, 1976	
Black Tern	77	May 2, 1978	July 29, 1977
Mourning Dove	3	May 23, 1978	June 20, 1976
Great Horned Owl	8	Apr. 26, 1977	Oct. 4, 1976
Snowy Owl	3	Nov. 15, 1977	Nov. 1, 1978
Great Gray Owl	1	July 9, 1977	
Short-eared Owl	4	Apr. 19, 1977	Oct. 5, 1976
Common Nighthawk	52	May 24, 1976	Aug. 15, 1977
Belted Kingfisher	34	May 1, 1977	Oct. 4, 1977
Common Flicker	471	Apr. 22, 1976	Oct. 5, 1976
Pileated Woodpecker	4	May 14, 1977	Nov. 28, 1977
Yellow-bellied Sapsucker	32	Apr. 25, 1977	Sept. 15, 1976
Hairy Woodpecker	97	Jan. 9, 1978	Dec. 27. 1977
Downy Woodpecker	32	May 14, 1977	Sept. 28, 1977
Blk.-backed 3-toed Woodpecker	1	May 6, 1977	
Northern 3-toed Woodpecker	11	May 13, 1977	Sept. 21, 1978
Eastern Kingbird	139	May 23, 1978	Sept. 8, 1976
Eastern Phoebe	16	Apr. 30, 1977 & 1978	Aug. 23, 1977
Say's Phoebe	7	May 3, 1978	Aug. 2, 1976
Yellow-bellied Flycatcher	88	May 24, 1978	Aug. 22, 1977
Alder Flycatcher	268	May 25, 1977	Aug. 22, 1976
Least Flycatcher	218	May 12, 1977	Aug. 12, 1977
Western Wood Pewee	75	May 25, 1977	July 21, 1977
Olive-sided Flycatcher	1	July 7, 1977	
Horned Lark	182	Apr. 26, 1978	Oct. 17, 1977
Tree Swallow	722	Apr. 22, 1977	Sept. 27, 1976
Bank Swallow	302	May 13, 1977	Aug. 8, 1977
Barn Swallow	508	Apr. 30, 1978	Sept. 21, 1977
Cliff Swallow	248	May 3, 1978	Aug. 27, 1977
Gray Jay	148	Jan. 30, 1978	Dec. 27, 1977
Blue Jay	35	Jan. 30, 1978	Dec. 27, 1977
Black-billed Magpie	80	May 11, 1977	Oct. 17, 1978
Common Raven	2200	Jan. 1, 1978	Dec. 31, 1977
Common Crow	283	Apr. 5, 1976	Oct. 4, 1977 & 1978
Black-capped Chickadee	258	Jan. 1, 1978	Dec. 27, 1977
Boreal Chickadee	31	Apr. 21, 1978	Oct. 12, 1977
Red-breasted Nuthatch	33	Apr. 20, 1977	Aug. 29, 1977
Long-billed Marsh Wren	1	May 26, 1977	
American Robin	976	Apr. 16, 1976	Nov. 30, 1977
Hermit Thrush	21	May 6, 1977	Oct. 6, 1976
Swainson's Thrush	179	May 8, 1976	Sept. 28, 1977
Mountain Bluebird	6	Apr. 4, 1978	Sept. 19, 1978

Species	# of Sightings	Earliest Arrival Date	Latest Departure Date
Ruby-crowned Kinglet	26	Apr. 26, 1977	Aug. 2, 1978
Water Pipit	163	Apr. 26, 1977	Oct. 12, 1977
Bohemian Waxwing	2	Oct. 14, 1978	Apr. 20, 1977
Cedar Waxwing	77	June 12, 1978	Sept. 14, 1976
Northern Shrike	6	Sept. 30, 1976	Apr. 14, 1978
Common Starling	672	Apr. 4, 1978	Nov. 29, 1977
Solitary Vireo	2	July 29, 1977	Aug. 24, 1977
Red-eyed Vireo	299	May 14, 1977	Sept. 6, 1976
Philadephia Vireo	10	May 20, 1977	Aug. 15, 1976
Warbling Vireo	6	May 20, 1976	Aug. 9, 1976
Black & White Warbler	11	May 12, 1976	Aug. 24, 1977
Tennessee Warbler	86	May 8, 1977	Sept. 10, 1976
Orange-crowned Warbler	14	May 10, 1977	Aug. 12, 1977
Yellow Warbler	434	May 16, 1978	Sept. 16, 1976
Magnolia Warbler	5	May 23, 1978	Sept. 1, 1978
Yellow-rumped Warbler	57	May 2, 1977	Sept. 29, 1977
Black-throated Green Warbler	1	Aug. 24, 1977	
Bay-breasted Warbler	20	June 2, 1977	July 14, 1978
Blackpoll Warbler	2	May 14, 1977	May 23, 1978
Palm Warbler	56	May 13, 1976	Oct. 4, 1977
Ovenbird	25	May 19, 1978	July 4, 1977
Northern Waterthrush	263	May 10, 1977	Sept. 1, 1976
Mourning Warbler	83	May 27, 1976 & 1977	Aug. 12, 1977
Common Yellowthroat	109	May 25, 1977 & 1978	Sept. 1, 1976
Wilson's Warbler	16	May 23, 1978	Sept. 19, 1976
Canada Warbler	50	May 25, 1977	Sept. 20, 1976
American Redstart	16	May 17, 1976	Sept. 2, 1976
House Sparrow	425	Jan. 1, 1978	Dec. 31, 1977
Western Meadowlark	22	May 2, 1977	July 21, 1977
Yellow-headed Blackbird	81	Apr. 29, 1977	Sept. 8, 1977
Red-winged Blackbird	1016	Apr. 9, 1976	Aug. 29, 1977
Rusty Blackbird	56	Apr. 29, 1977	Oct. 12, 1977
Brewer's Blackbird	285	Apr. 22, 1977	Oct. 12, 1977
Common Grackle	714	Apr. 22, 1977	Oct. 5, 1977
Brown-headed Cowbird	202	May 4, 1977	Sept. 9, 1976
Western Tanager	59	May 15, 1977	Aug. 5, 1977
Rose-breasted Grosbeak	11	May 12, 1977	Sept. 6, 1976
Evening Grosbeak	46	Aug. 26, 1978	May 13, 1977
Purple Finch	61	Apr. 21, 1977	Oct. 1, 1976
Pine Grosbeak	6	Nov. 8, 1977	Jan. 7, 1978
Common Redpoll	34	Oct. 21, 1977	Apr. 20, 1978
Pine Siskin	22	June 14, 1977	Sept. 13, 1977
American Goldfinch	5	June 6, 1977	Aug. 3, 1976
White-winged Crossbill	1	Oct. 26, 1977	
Savannah Sparrow	374	May 3, 1978	Sept. 25, 1976
LeConte's Sparrow	76	May 10, 1977	Aug. 31, 1976
Sharp-tailed Sparrow	5	July 19, 1977	Sept. 7, 1976
Vesper Sparrow	3	May 18, 1978	July 20, 1977
Dark-eyed Junco	291	Apr. 10, 1976	Oct. 13, 1976 & 1978
Tree Sparrow	162	Apr. 16, 1976	Oct. 18, 1977
Chipping Sparrow	377	May 7, 1977	Sept. 2, 1976
Clay-colored Sparrow	163	May 14, 1977	Aug. 8, 1976
Harris' Sparrow	41	May 9, 1977	Oct. 12, 1977
White-crowned Sparrow	141	Apr. 28, 1978	Sept. 21, 1976
White-throated Sparrow	345	May 3, 1976	Sept. 29, 1977

Species	# of Sightings	Earliest Arrival Date	Latest Departure Date
Fox Sparrow	67	Apr. 23, 1976	Oct. 12, 1977
Lincoln's Sparrow	91	May 13, 1977	Sept. 12, 1977
Swamp Sparrow	167	May 14, 1977	Sept. 30, 1976
Song Sparrow	887	Apr. 20, 1976	Oct. 8, 1976
Lapland Longspur	94	Apr. 28, 1976	Oct. 6, 1976
Snow Bunting	159	Feb. 20, 1978	Oct. 27, 1976

SKIPPERS AND BUTTERFLIES OF A PRAIRIE FARM

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Extremely little published information is available on the skippers and butterflies of the southern Alberta prairies. To help fill this gap, the present paper reports on the skippers and butterflies found at the R. Harris farm, about 5.6 km SE of Standard. Standard is about 96 km east of Calgary.

This is the first known report on the skippers and butterflies of a rather typical situation in many thousands of square kilometres of the prairies of southern Alberta and southwestern Saskatchewan. With the exception of a few large blocks of natural habitat and a few river valleys, the prairie region is an ecological desert with only tiny pieces of semi-natural habitat present in places too wet, steep, salty, or sandy to cultivate. Previous literature (Bird and Kondla, 1974; Bird, 1975; Smith and Bird, 1977) deals with areas that are much larger, more diverse in habitats, and relatively less disturbed.

The study area consists of about 15 ha of semi-natural and disturbed land along Parflesh Creek. About 99 per cent of land in the immediate area is regularly cultivated and contains no significant butterfly habitat. Examination of relict natural vegetation indicates a pre-settlement vegetation of mixed-grass prairie surrounding the study area while rough fescue grassland prevailed just a few miles to the north in the Wintering Hills.

During the period of study the vegetation was in a continual and rapid state of flux due to climatic variation, changing land use, and varying grazing intensities. The six major butterfly habitats are: east and north-facing slopes with tall shrub thickets of *Salix bebbiana*, chokecherry, Saskatoon, and red osier; low shrub areas with rose, buckbrush, and gooseberry; south and west-facing slopes and streamside flats dominated by grasses, sedges and wildflowers; introduced grasslands dominated by bromegrass and grain crops; meander scars with dock, sloughgrass, hairgrass, sneezeweed, etc.; and farmyard, shelterbelt and garden.

Collections were made by the writer and S. Harris on 33 different days from 30 April to 30 September during the years 1974 to 1978 inclusive. Casual observations were made on many other days. Considering the size of the study area, this permits a very complete enumeration of resident species.

ANNOTATED LIST

For each species the following minimal commentary is provided: habitat, general flight period, dates of specimen records. As used in this list, spring encompasses May and June, while summer includes July and August.

HESPERIIDAE

Peck's Skipper *(Polites coras)* - native and introduced grasslands, especially grassy hillsides and roadside awnless brome; mid-summer; 4 VIII 1975, 15 VII 1977.

Long Dash *(Polites sonorah dacotah)* - native and introduced grasslands, especially grassy hillsides and roadside awnless brome; late spring to mid-summer; 14 VIII 1976, 3 VII 1977, 15 VII 1977, 23 VII 1977, 1 VII 1978.

Uncas Skipper *(Hesperia uncas uncas)* - native grassland on hillside; only records consist of 1 fresh female and 1 average male on 1 VII 1978.

Assiniboia Skipper *(Hesperia comma assiniboia)* - native grassland; flight period probably mid to late summer; 3 average females 1 IX 1974.

Garita Skipper *(Oarisma garita)* - native grassland; late spring to mid-summer; 14 VIII 1976, 1 VII 1978.

Common Checkered Skipper *(Pyrgus communis communis)* - native and introduced grassland; mid-spring to late summer; 1 IX 1974, 14 VIII 1976, 3 VII 1977, 5 IX 1977, 11 VI 1978, 1 VII 1978.

PAPILIONIDAE

Western Black Swallowtail *(Papilio bairdii bairdii)* - S. Harris caught one stray fresh female in the farmyard on 5 VII 1976.

PIERIDAE

Western Checkered White *(Pieris protodice occidentalis)* - all habitats; early to late summer; 1 IX 1974, 6 VII 1975, 31 VIII 1975, 31 VII 1977.

Cabbage White *(Pieris rapae)* - found in a-l habitats but most abundantly in the farmyard; early spring to late summer; 13 VII 1974, 8 VI 1976, 4 VIII 1975, 9 V 1976, 30 IV 1977, 1 IX 1977, 5 IX 1977, 3 VI 1978.

Orange Alfalfa Butterfly *(Colias eurytheme eurytheme)* - only one record of a worn male on 15 July 1977; apparently a migrant or windblown stray.

Yellow Alfalfa Butterfly *(Colias philodice eryphyle)* - abundant in all habitats; mid-spring to late summer; 25 IV 1974, 1 IX 1974, 8 VI 1975, 22 VI 1975, 29 VI 1975, 4 VIII 1977, 11 VI 1977, 7 VIII 1978.

Alexandra Sulphur *(Colias alexandra alexandra)* - only record is one fresh male on 11 VI 1978; probably more abundant since the insect is difficult to distinguish from the yellow alfalfa butterfly when flying and thus easy to miss without diligent sampling.

Christina Sulphur *(Colias alexandra christina)* - one slightly worn male found on 1 VII 1978; probably a stray since this is not the typical prairie version of this species.

LYCAENIDAE

Bronze Copper *(Lycaena thoe)* - meander scar meadow; early to mid-summer; 4 VIII 1975, 2 VIII 1976, 15 VII 1977; least abundant of the three coppers found here.

Great Copper *(Lycaena xanthoides dione)* - meander scar meadow; mid-spring to late summer; 1 IX 1974, 2 VIII 1976, 15 VII 1977, 23 VII 1977, 27 VII 1977, 31 VII 1977, 3 VIII 1977, 11 VI 1978, 7 VIII 1978; all the coppers were found to be very habitat-specific, never seen more than a few feet from the seasonally wet meander scar meadows.

Purplish Copper *(Lycaena helloides)* - meander scar meadow; mid-spring to late summer; 13 VII 1974, 1 IX 1974, 29 VI 1975, 6 VII 1975, 20 VIII 1975, 31 VIII 1975, 24 V 1976, 14 VIII 1976, 23 VII 1977, 31 VII 1977, 31 VII 1977, 3 VIII 1977, 4 VIII 1977, 5 IX 1977, 7 VIII 1978; probably the most abundant butterfly of the area despite the restricted habitat; definitely the most abundant copper.

Melissa Blue *(Lycaeides melissa melissa)* - native grassland; late spring to late summer; 1 IX 1974, 29 VI 1975, 20 VIII 1975, 14 VIII 1976, 1 VII 1978.

Greenish Blue *(Plebejus saepiolus amica)* - native grassland, introduced grassland and low shrub habitats; mid-spring to late summer; 8 VI 1975, 22 VI 1975, 29 VI 1975, 20 VIII 1975, 14 VIII 1976, 1 VI 1978.

Rustic Arctic Blue *(Plebejus aquilo rustica)* - native and introduced grassland habitats; mid to late spring; 22 VI 1975, 29 VI 1975, 11 VI 1978.

Silvery Blue *(Glaucopsyche lygdamus couperi)* - native grassland; early spring to early summer.

NYMPHALIDAE

White Admiral *(Limenitis arthemis rubrofasciata)* - so far only seen in the farmyard where it seemed to be attracted by the carraganas; early to late summer; 13 VII 1974, 6 VII 1975, 14 VIII 1976.

Viceroy *(Limenitis archippus archippus)* - On 4 VIII 1975, I found one fresh male flying along the creek.

Red Admiral *(Vanessa atalanta rubria)* - Farmyard and tall shrub habitats; early to late summer; 29 VI 1975, 6 VII 1975, 16 VIII 1975.

Painted Lady *(Cynthia cardui)* - a few fresh females were found in the farmyard on 20 IX 1978.

Compton Tortoise-shell *(Nymphalis vau-album watsoni)* - one was found on a tractor wheel on the evening of 20 IX 1976.

Milbert's Tortoise-shell *(Nymphalis milberti furcillata)* - farmyard and tall shrub habitats; worn hibernators may be found from early spring to mid-summer while fresh individuals are to be seen from mid to late summer; 4 VIII 1975, 9 V 1976, 14 VIII 1976.

Mourning Cloak *(Nymphalis antiopa antiopa)* - tall shrub and farmyard habitats; phenology same as previous species; 4 VIII 1975, 23 VIII 1975, 9 V 1976, 15 VII 1977.

Satyr Angle-wing *(Polygonia satyrus satyrus)* - one average female was found on 9 V 1976 in tall shrub habitat.

Pearl Crescent *(Phyciodes tharos tharos)* - native and introduced grassland and low shrub habitats; mid-spring to late summer; 1 IX 1974, 1 VIII 1975, 14 VIII 1976, 3 VII 1977, 23 VII 1977, 4 VII 1977, 4 VI 1978, 11 VI 1978, 7 VIII 1978.

Meadow Fritillary *(Boloria bellona jenistai)* - one fresh male was found on 9 V 1976 in native grassland.

Callippe Fritillary *(Speyeria callippe calgariana)* - one average male was found on 15 VII 1977 in native grassland.

Bean's Fritillary *(Speyeria atlantis beani)* - so far only one female on 11 VIII 1975 in native grassland; it is impossible to separate this species from the more abundant aphrodite fritillary when in flight and it may be more abundant than this single record indicates.

Mormonia Fritillary *(Speyeria mormonia eurynome)* - native grassland and low shrub habitats; early to late summer; 13 VII 1974, 1 IX 1974, 4 VIII 1975, 2 VIII 1976, 15 VII 1977, 23 VII 1977.

Great Spangled Fritillary *(Speyeria cybele pseudocarpenteri)* - low shrub and native grassland habitats; early to mid-summer; 4 VIII 1975, 15 VII 1977.

Aphrodite Fritillary *(Speyeria aphrodite)* - native grasslands and low shrub habitats; early to late summer; 1 IX 1974, 11 VIII 1975, 27 VII 1977, 4 VIII 1977, 2 VIII 1978. The variation and subspecific status of this species in Alberta has not been adequately documented. Dos Passos and Grey (1947) assign Alberta material to *manitoba*. Bowman (1951) did not assign a subspecies name to material available to him. Bird (1975) reports the subspecies *manitoba* from Calgary but the ones I found at the Harris farm seem to bear no resemblance to this subspecies on the basis of size, intensity of coloration and extent of the disk. Based on available literature (Howe, 1975; Moeck, 1957) and specimens I have collected in southern Alberta (Pinhorn Grazing Reserve, Dinosaur Provincial Park, Emerson Bridge, Rosebud, Wintering Hills, Wainwright, Redwater, and the current study area), our Alberta populations clearly show greater affinity to *ethne* and *whitehousei* stock than *manitoba* stock. The taxon *manitoba* has most often been reported as *mayae* (eg. dos Passos and Grey, 1947; Hooper, 1973; Howe, 1975) but Masters (1974) shows that *manitoba* should be used for the smaller, paler populations of the eastern Canadian plains. These apparent affinities are not really very surprising since the type localities of both *ethne* and *whitehousei* are much closer to southern Alberta than the type locality of *manitoba*. There are no known genetic barriers between populations and clinal variation is a very well known phenomenon in *Speyeria*. The darkening and increase in size of *aphrodite* in moving west from Manitoba is also present in the variation of *atlantis* (Grey, 1951).

SATYRIDAE

Ringlet *(Coenonympha inornata benjamini)* - native and introduced grasslands and low shrub habitats; mid-spring to late summer; 29 VI 1975, 6 VII 1975, 14 VIII 1976, 4 VI 1978, 11 VI 1978.

Riding's Satyr *(Neominois ridingsii ridingsii)* - dry, open native grassland at the crest of the coulee slope; probably flies from late spring to early summer but only definite record so far is one average female on 1 VII 1978.

Common Wood Nymph *(Cercyonis pegala ino)* - low shrub, introduced grass, and taller portions of native grass habitats; mid to late summer; 1 IX 1974, 4 VIII 1975, 2 VIII 1976, 31 VII 1977, 4 VIII 1977.

Varuna Arctic *(Oeneis uhleri varuna)* - native grassland; mid to late spring; 22 V 1976, 11 VI 1978.

Alberta Arctic *(Oeneis alberta alberta)* - native grassland; early to mid spring; 8 VI 1975, 9 V 1976, 30 IV 1977; I have noticed some variation in color intensity from year to year, similar to the situation reported by Brown (1953) for *O. a. oslari*.

DISCUSSION

A total of 40 taxa have been found, 23 of which are considered to be residents while 6 species are probably windblown strays or migrants. In terms of number of species per family, the fauna is constituted as follows: Hesperiidae - 6 (15 per cent), Papilionidae - 1 (2 per cent), Pieridae - 5 (13 per cent), Lycaenidae - 7 (18 per cent),

Nymphalidae - 15 (38 per cent), Satyridae - 5 (13 per cent). Except for the slightly lower representation of Lycaenidae and slightly higher representation of Nymphalidae, this is representative of the situation within Alberta as a whole.

The number of resident species found in each habitat is as follows: meander scar - 6, tall shrubs - 7, farmyard - 7, low shrubs - 10, introduced grassland - 10, native grassland - 26. Native grassland is the most abundant habitat that was thoroughly searched for butterflies, and therefore one might expect more species to be present than in other habitats with lesser area. The value of the native grassland as butterfly habitat is, however, reinforced by the substantially greater number of species that use it as well as the overall abundance of individual insects. The meander scar habitat, although small in area and depauperate in terms of species, frequently teams with coppers, particularly the purplish copper.

The number of butterfly species on the wing increases gradually from early spring and peaks in mid-summer. This differs from the situation in nearby Calgary, where the peak flight season occurs in late spring.

Natural habitats in large areas of the prairies are extremely localized because of massive landscape alteration by agricultural activity. This promotes the possibility of local population extinction in individual habitat patches and renders recolonization more difficult. My observations indicate that prairie creeks may be very significant as corridors of butterfly habitat and may facilitate recolonization of nearby habitat patches. This paper also shows that a surprising variety of skippers and butterflies can be found in small areas of seemingly marginal habitat.

LITERATURE CITED

Bird, C.D. 1975. A revised calendar of the butterflies and skippers of Calgary. Calgary Field Nat. 6: 312-314.

Bird, C.D. and N.G. Kondla. 1974. Some skippers and butterflies from Dinosaur Provincial Park, Alberta. Blue Jay 32: 87-88.

Brown, F.M. 1953. The subspecies of *Oeneis alberta* (Lepidoptera, Satyridae). Amer. Mus. Novitates No. 1626. 21 pp.

dos Passos, C.F. and L.P. Grey. 1947. Systematic catalogue of *Speyeria* (Lepidoptera, Nymphalidae) with designations of types and fixations of type localities. Amer. Mus. Novitates No. 1370. 30 pp.

Grey, L.P. 1951. The subspeciation of *Speyeria atlantis*. The Lepidopterists News 5: 31-35.

Hooper, R.R. 1973. The butterflies of Saskatchewan. Sask. Mus. of Nat. Hist. 216 pp.

Howe, W.H. (ed.) 1975. The butterflies of North America. Doubleday & Co. Inc. 632 pp.

Masters, J.H. 1974. The proper subspecific name for *Speyeria aphrodite* (Nymphalidae) in southwest Manitoba. J. of the Lepidopterists Soc. 28: 100-102.

Moeck, A.H. 1957. Geographic variability in *Speyeria*. Paper presented to the Milwaukee Entomological Society. 48 pp.

Smith, W.W. and C.D. Bird. 1977. Some butterflies and skippers from the Milk River - Lost River area of southeastern Alberta. Blue Jay 35: 15-18. Errata 35: 77.

THE YELLOW VIRGINS-BOWER (CLEMATIS TANGUTICA) IN ALBERTA

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The Virgins-Bowers *(Clematis spp.)* are well-known and attractive members of the buttercup family *(Ranunculaceae)*. The White Virgins-Bower *(C. ligusticifolia)* is a familiar sight in prairie coulees, along creeks and in riverside shrubbery throughout southern Alberta. The Mountain Clematis *(C. columbiana)* is commonly encountered in the foothills and mountains of western Alberta. There is another species of the group in the province, but it is much less widely known - though no less spectacular.

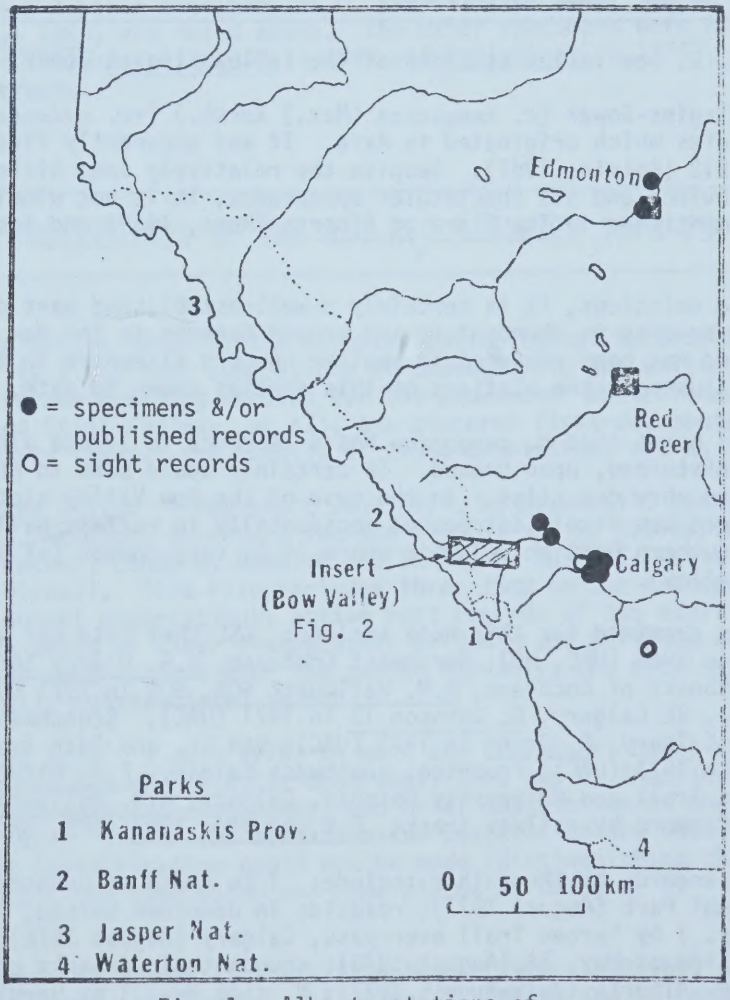

Fig. 1. Alberta stations of the Yellow Virgins-Bower.

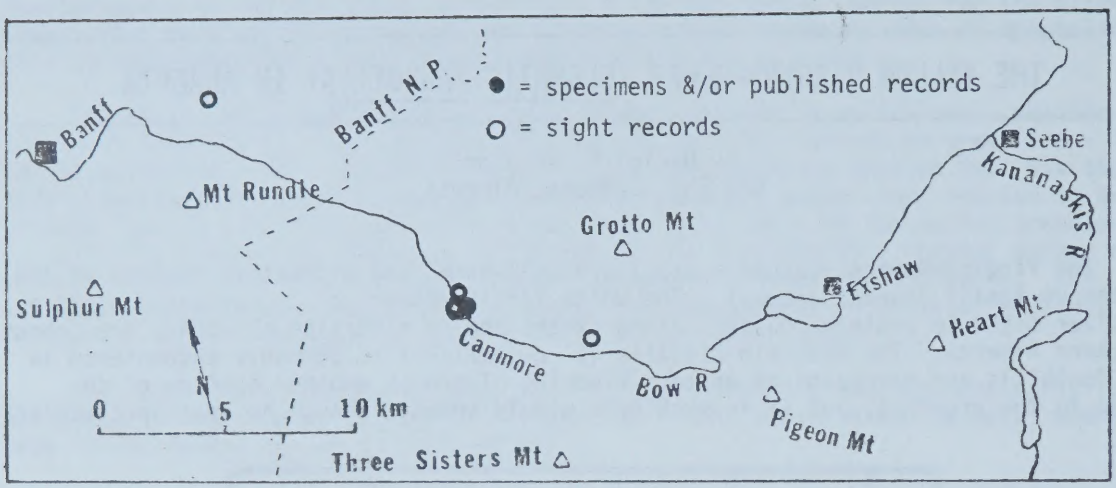

Fig. 2. Bow Valley stations of the Yellow Virgins-Bower.

The Yellow Virgins-Bower (*C. tangutica* (Max.) Korsh.) (=*C. orientalis* L.) is an introduced species which originated in Asia. It was apparently first introduced into Alberta in 1912 (Boivin, 1967). Despite the relatively long history this plant has had in the province and its spectacular appearance, it is not widely recognized and was not even mentioned in The Flora of Alberta (Moss, 1959) and its supplement (Packer, 1974).

Despite these omissions, it is certainly a well-established part of the province's flora today. The species is abundant in and around Canmore in the Bow Valley of western Alberta and has been recorded in smaller numbers elsewhere in the province. Figures 1 and 2 illustrate the stations of this species known to date.

Boivin (1967) notes that *C. tangutica* has a tendency to locate along railway tracks and other disturbed, open ground. It certainly would seem to prefer open, exposed, gravelly and very dry sites. In the case of the Bow Valley stations at least, we suspect that seed was likely introduced accidentally in railway ballast spilled off trains from southern British Columbia where it is very common (at least in parts of the Columbia Valley).

The specimens examined for this note include: GSL Chev City car lot, SE Calgary, M.W. Battrum 660 in 1965 (UAC, MO); Northeast Cochrane, W.G. D'Arcy 5664 in 1971 (UAC, MO); 10 miles northeast of Cochrane, B.M. Hallworth 508, 509 in 1971 (UAC); Heritage Drive and 6th Ave., SE Calgary, D. Johnson 12 in 1971 (UAC); Scotchman's Hill, near Stampede Grounds, Calgary, R. Jones in 1971 (UAC); 9th St. and 34th Ave., SW Calgary, J. Van Staden 10 in 1971 (UAC); roadside, southwest Calgary, P.J. Olthof in 1973 (UAC); between Shaganappi Trail and University Heights, Calgary, B.M. Hallworth in 1976 (UAC); east entrance to Canmore by railway tracks, D.F. Brunton 1383 (DFB, DAO).

Recent sight records by the author include: 1 km south of Johnson Lake on roadside, Banff National Park (August 1977); roadside in downtown Vulcan, Alberta (July 1977); N. side Hwy. 1 by Sarcee Trail over-pass, Calgary (August 1978); 6 km east of Canmore on N. side of Hwy. 1A (August 1978); abundant along banks of Bow River throughout Canmore, Alberta (July-August 1977); N. side Hwy. 1 by Harvie Heights, Canmore (August, 1978).

There are undoubtedly additional Alberta records to be noted, particularly as the herbarium at the University of Alberta in Edmonton was not examined.[1]. Clearly, however, the species is well-established here - particularly in southern Alberta - and should be included in up-coming revisions to the list of Alberta flora.

LITERATURE CITED

Boivin, B. 1967. Flora of the Prairie Provinces. Part II. Provancheria 3, Universite Lavall, Quebec.

Moss, E. 1969. The Flora of Alberta. University of Toronto Press, Toronto.

Packer, J.G. 1974. in Moss, The Flora of Alberta (Revised), University of Toronto Press, Toronto.

1. Following the preparation of this article, additional data were provided by Dr. C. Frankton of the Biosystematics Research Institute, Agriculture Canada, Ottawa (DAO). He examined the 5 Alberta specimens of *C. tangutica* in DAO. Two of these (D'Arcy 5664 and Brunton 1383) are noted above. The other specimens were all from Edmonton (Turner 2644 in 1941, Frankton 898 in 1949 and Muhlenbach in 1976). All were collected along railway tracks.

PROCEEDINGS OF THE A.O.R.C., WINTER 1978-79

During the winter 1978-79, the Alberta Ornithological Records Committee examined and placed in its files four submissions of photographic and written records. Two or these concern new breeding records for the province: White-faced Ibis (Fitzharris) and Black-necked Stilt (Bulmer, et al); one concerns first-documentation for the province: Garganey (Sars); the details of these submissions are as follows:

Black-necked Stilt: 1 May and 5 June 1977, at Beaverhill Lake; submission by B. Bulmer and C. Weseloh; observers include also J. and R. Gillespie, T. Thormin, R. Lister, D. Dekker, Linda M. Weseloh, A. Smith, E. Tull, E. Mills, W.R. Salt, L. Bogaert, M. McNicholl. This file includes three 35mm colour transparencies (deposited in file); subsequent observations; active nest records of two adult pairs through 4 July. On the basis of clear photographic evidence and periodic nest records with growth-rates and descriptions over the period May-July, the submission was placed in Category I - fully-substantiated record.

White-faced Ibis: 1 July 1978, on west arm of Pakowki Lake; submission by T. Fitzharris, by request of A.O.R.C.; observers, T.F. and D. Thomlinson. This file includes one 35mm colour transparency, and brief description of one dead or nearly-dead young on nest. Due to the condition and position of the nestling in the photograph, positive identification could not be made (distinguishing characters are missing in the photo); the submission was thus placed in Category IV - unsubstantiated record.

House Finch: 13 August to about 3 September 1978, at Busby, Alberta; submission by V. Lang, observers included V.L., B. Lang, B. George and L. Lang. The file includes four 35mm colour transparencies of an adult male bird. On the basis of clearly recognizable features in the combination of photographs submitted, this record was placed in Category I - fully-substantiated record.

Garganey: 7 May 1977, at Galahad, Alberta (record sent to the Provincial Museum of Alberta on 3 October 1977, and not received by A.O.R.C. until February 1979); submission by K. Sars; observers Mr. & Mrs. K. Sars. The file includes two 35mm colour transparencies of an adult male bird; notes on appearance and behaviour, as well as vocalization of bird. The Garganey was with Blue-winged Teal. On the basis of photographs showing clear distinguishing features, this submission was placed in Category I - fully-substantiated record.

UNFINISHED BUSINESS

A further record, of Gray-headed Chickadee noted by various observers on a wide range of dates in Edmonton (winter 1978-79) has not yet been processed.

The Alberta Ornithological Records Committee wishes to thank all naturalists and biologists who have contributed time, records and photographic material to the committee's files.

HIGHLIGHTS OF WINTER, 1978-1979, BIRDS, SOUTHERN ALBERTA

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The past winter was not particularly severe in the Calgary area. A three-week cold spell from the end of December until mid-January, and a second one from the end of January until mid-February saw temperatures at night approach -30°C on several occasions. The main snow cover came down in two short periods in January. March was a rather pleasant month, but just as the spring bird migration was getting underway, a cold snap at the end of March shut it down.

A small flock of Canada Geese spent the winter on the Bow River in Calgary, as has been the case in the last few years; and all through the winter months flocks of Mallards could be seen flying from the Bow River to the stubble field and back. A sighting of seven Gadwalls was received for early January from Calgary, and the odd American Wigeon was also reported. A few Barrow's Goldeneyes were also present.

Single Rough-legged Hawk reports came in throughout the winter. Similarly, Golden Eagles were reported as singles from foothills locations and Lethbridge. Possibly five Bald Eagles spent the winter in Calgary along the Bow River. Single Prairie Falcons were well-reported from the Shepard/Dalemead/Strathmore corridor during February.

Two Killdeer were seen in Calgary on 17 December, while a Common Snipe was reported from near Caroline on 14 January. Great Horned Owl reports were again low during the winter months. Snowy Owls were rather common this winter. Two and possibly three Hawk Owls spent the winter near Bottrell, and one was reported from near Irricana on 31 January. Short-eared Owls were also very common.

Common Flickers were reported wintering in Calgary, as were some American Robins and Red-breasted Nuthatches. Horned Larks, usually reported in small numbers, were present on the prairies east of Calgary. Both ravens and crows were reported from Calgary, and nineteen ravens were seen near Janet on 18 February. Only a few Boreal Chickadees were reported and no Mountain Chickadees. A single White-breasted Nuthatch was reported from Calgary during the winter months, while three were seen near Dog-

pound in late December. As usual, the occasional Dipper wintered in Calgary on the Elbow River, and six were reported from near Water Valley on March 4.

A single Townsend's Solitaire was seen along the Douglas Fir Trail in Calgary on December 25. One Cedar Waxwing, in the company of Bohemian Waxwings, was reported from near Trochu on December 3. Northern Shrikes were also not uncommon. Evening Grosbeak reports were extremely few this winter. Redpoll numbers were drastically down from the peak last year, while a single Pine Siskin was sighted in Calgary on December 26. A small flock of Dark-eyed Juncos wintered in Calgary, and a single Tree Sparrow was seen near Lyalta on February 11. One Lapland Longspur was sighted near Kathyrn on January 29, and nine were seen near Lyalta on February 11. Small flocks of Snow Buntings were seen throughout the area during the winter months.

More detailed tabulations for the winter period can be found in the winter and early spring issues of The Calgary Field Naturalist.

COMMENTS ON GREAT BLUE HERON COLONY CENSUS METHODS

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by Rudi Butot
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In R.M. Fisher's recent article, "Census of Two Great Blue Heron Colonies in the Calgary Area, with a Discussion of Methods for Future Monitoring" (Alta. Nat. 9: 6-14), Fisher creates in several instances a false scenario by either misquoting and/or selectively quoting the author(s) of previous material. I would like to rectify several of these instances and comment on his methodology.

Fisher states "Butot (1975) explicitly concluded that his methodology was valid to use for future studies by the layman". However, what the 1975 article actually states is "The results seem to indicate that this method is workable". Next, Fisher has Butot arguing that his methodology is accurate when, in reality, Butot is arguing that if his method is accurate enough, then it could be used by laymen naturalists, which would, hopefully, convince these persons to use the binocular-telescope method of surveillance rather than entering the heron colonies to observe the contents of the nests (which often has disasterous results, and was being contemplated at that time).

The parameters used in the 1975 survey were parameters established in previous surveys, done mostly by professional wildlife people. These parameters to measure the success of a heronry were: (1) per cent of successful nests; (2) number of young fledged per nesting pair; and (3) number of young fledged per successful nest. The 1975 article was published in the hope that if enough future surveys were done, an average could empirically be derived against which to measure large deviations.

I strongly disagree with Fisher when he writes ". . . myself [Fisher] have concluded that there was only one production parameter that could be obtained and utilized with confidence from using a naturalist's methodology. Per cent successful nests. . .". The remainder of the sentence referred the reader to Table 1, and defined per cent successful nests as "the total number of nests that contained at least one young at some time throughout the survey, divided by the total number of nests that were known to be occupied (from a single census on the last weekend in May), subtract the number of obscure nests after the late May census. . ."

A review of Table 1 shows the figures for per cent successful nests to be 89 for Bottrel (I am not quite sure of the arithmetic there), and 100 for Carseland. So what we have is two figures, 89 per cent and 100 per cent. However, what does it tell us about the heron colony? Let us take the easy number, 100. It tells us that if we had seen only one heron and later one young in the whole colony, then we would have a perfect score of 100 per cent for that colony. By itself it really tells us nothing meaningful about the colony at all!

Fisher, in his concluding discussion, also seems to realize that something is amiss. So he substitutes a graph on nests, based on a tabulation of nests per colony given in Butot (1975), to which he has added the matching data from his own surveys, and states "This production parameter is certainly not the best index of colony productivity, but it is a measure of the general growth of a given heronry". May I ask what happened to the one and only production parameter - per cent successful nests - that was required?

Finally, Fisher recommends that the parameters for per cent fledged young per nesting pair, and per cent young fledged per successful nest be dropped, since this will improve the reliability of the data and the simplicity of the methodology. However, these parameters are only secondary derivatives of the primary data collected in the field. So what Fisher seems to proclaim is that if you do not use primary numbers in any calculations, then these primary numbers themselves become more reliable.

I certainly hope that Fisher has retained the original data supplied by his observers so that we may still be able to obtain the production parameters used in the previous surveys, such as number of young fledged per nesting pair and number of young fledged per successful nest. It is, of course, quite possible that the results obtained by a professional naturalist, who would have climbed up to the nest repeatedly, would be more accurate, but I feel we should try to keep that sort of activity to a minimum by trying to fine-tune, as much as possible, the binocular-telescope approach. Entering the heronry is often detrimental, and certainly causes distress to the colony. The telescope allows observation without disturbing the day-to-day activity of the colony.

To accomplish this in a meaningful way, the observer would certainly have to observe the colony more often than proposed by Fisher. From my experience the gap between one visit in late April and one visit in late May is too long. The trees are so far along in leaf in late May, as opposed to no leaves in April, that it would be most difficult to properly locate many of the nests. The abandonment of the Fish Creek survey in Fisher's 1978 census efforts seems a good case in point. Similarly, too large a gap exists between the later visits regarding the young.

I find it interesting to note that the Bottrel heronry, which seemed the most successful, was also the most intensively watched one in 1978. (It is also the easiest one to observe, being the least obscured of the three.) These results seem to agree with the results obtained in the 1974 survey (Butot, 1975), when these were compared with the 1973 survey (Lang, 1974), namely, the greater the effort put into the survey, the more accurate the results appeared to be. This is in no way meant to reflect on Lang's efforts. His objectives were more multi-faceted and urgent, and, as such, he had to allocate his available time differently than I did in 1974.

The Fish Creek heronry is in a park, and the Carseland one is near a park, both of which attract people. The Bottrel one on the other hand is on more protected and isolated private land. The Carseland heronry is also the most vulnerable one, because trespassers can gain access undetected. Of course, other factors might be affecting the possible decline of the Carseland heronry. On the other hand, the Carseland area allows a greater choice of sites for colonies, as is indicated by the small satellite

colonies which have formed in the area throughout the years. Nonetheless, if the several production parameters used in the 1973 and 1974 surveys had also been derived for the 1978 survey, then we might be in a better position now to try and interpret the apparent decline in the Carseland colony.

I certainly agree with Fisher that using his "new methodology" these production parameters would not be worth the time it takes to calculate them. However, since during the 1978 effort the methods used were, in large part, based on those used by Butot (1975), it certainly would be appreciated if a summary of the observers' 1978 data could be published or otherwise made available to interested readers.

LITERATURE CITED

Butot, R. 1975. Three Great Blue Heron colonies of the Calgary +50 area, Alberta. Calgary Field Nat. 6: 247-253.

Fisher, R.M. 1979. Census of two Great Blue Heron colonies in the Calgary Area, with a discussion of methods for future monitoring. Alta. Nat. 9: 6-14.

Lang, B. 1974. Census of five Great Blue Heron colonies in southern Alberta, with a discussion of methods. Alta. Nat. 4: 16-22.

OVERHEARD. . .

"There was a time when meadow, grove,
and stream,
The earth, and every common sight,
To me did seem
Apparelled in celestial light,
The glory and the freshness of a dream.
It is not now as it hath been of yore;
Turn whereso'er I may,
By night or day,
The things which I have seen I now can
see no more."

William Wordsworth

WEEDY PLACES AND THE WESTERN IRRIGATION DISTRICT

by Kevin Van Tighem
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My dad used to take me pheasant hunting when I was small. We lived in Calgary and hunted pheasant in the Western Irrigation District near strathmore. There were hundreds of pheasants in that area, living in the brushy tangles of rose and willow along the ditchbanks, the bromegrass of the roadsides, the abandoned corners of fields and the grassy slough edges.

Once in a while we flushed a Sharp-tailed Grouse and my dad would tell me how when he was a boy growing up in Strathmore pheasants had been unknown and "prairie chickens" were the common upland game birds. There had still been a lot of native prairie then, with the tangles of silverberry and buckbrush that the grouse liked.

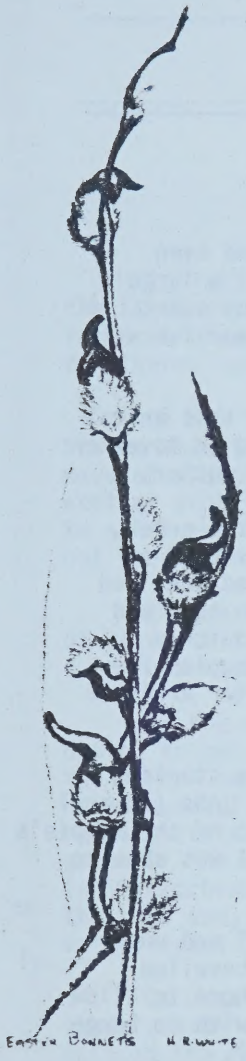
Sharptails were scarce by the time I was old enough to go hunting, their habitat almost eliminated by agriculture. Each time the price of wheat rose for a year or two more wild prairie disappeared beneath the plough. This is no news to anyone, of course; the fragmentation of the mixed-grass prairie has come to be a fact well-known and often lamented by Alberta naturalists.

Still, those early hunting trips were my first real exposure to Nature and to my unsophisticated eyes the flush of fifty pheasants from the edge of an irrigation ditch, the drunken flight of short-eared owls over the evening fields, and the coyotes hunting the over-grazed coulees were as wild and as meaningful to me as the native grouse and mule deer I so rarely got to see.

My family still hunts the Western Irrigation District today. The irrigation ditches have had a long history of inadequate maintenance and by now they have developed stands of hybrid poplars, willows and buckbrush that have a beauty which, if not quite-natural, is nonetheless satisfying to me. White-tailed deer, unknown in the area until this decade, are now common; blue jays, downy woodpeckers and black-capped chickadees forage in the trees along the ditches, and this year we saw a red fox for the first time in my dad's memory.

The Western Irrigation District no longer bears any resemblance to the mixed grassland of only a hundred years ago, but its intensively-cultivated and modified landscape is not necessarily cause for excessive sorrow. One community of living things is gone and will probably never return; its loss points out to us the necessity of preserving similar ecosystems in other areas where they still survive. But it has been replaced here by a complex and diverse community almost equally as rich, if somewhat less stable. The pronghorns are gone; there are now white-tailed deer. The sharp-tailed grouse are gone, but Hungarian partridges are common. Sagebrush is rare but now there are hybrid poplars and red-osier dogwood.

Where the damage has been done and the natural landscape irremediably changed, it becomes too easy to write off our losses and look elsewhere for more intact landscapes to protect. This has certainly been the case in the Western Irrigation District which has been virtually ignored by organized nature conservation groups. Over 90 per cent of its land area has been cultivated or otherwise disturbed. There are no tracts large enough remaining to bother trying to preserve as representative natural areas. It is a write-off area, too far gone to bother with any more.



So things keep getting worse. Even the pheasant, a weedy bird that lives in weedy places, is beginning to run out of weeds.

In 1978 I saw survey stakes and flagging along many of the major irrigation ditchbanks for the first time. There were piles of tree trunks where the old poplars had been cut down, and great mounds of dirt where stands of willow used to be. The days of neglect are almost over for ditches of the W.I.D. Our provincial government has suddenly found itself with an abundance of dollars and is funnelling some of them into the business of cleaning up the ditchbanks, eliminating the vegetation that steals water meant for field crops, and making the countryside more efficient for the production of grain.

No doubt there are those among us who will say it does not matter that the poplars, the deer, blue jays, coyotes and red-tailed hawks will be eliminated when the ditches are cleaned up. After all, they never belonged there in the first place; that area should be mixed prairie.

But it does matter. When all has finally been reduced to a monoculture of grain and starlings neatly partitioned by clean polythene-lined irrigation ditches our loss, already so great, will be that much greater. We will have lost not only the wild prairie, but the biotic diversity that had arisen from nature's attempts to heal the damage already done to the land.

What is happening to the Western Irrigation District is symptomatic of something that is happening to all the farmlands and heavily-developed parts of the province.

We need wee patches, abandoned hayfields, wooded ditchbanks, ungrazed streamsides and strips of bromegrass and buckbrush along the edges of grainfields. We need the little bits and pieces that remain in the developed parts of the province, places where vesper sparrows can hide their nests, white-tailed deer can get out of the winter winds, and voles and mice can continue to produce litters to feed what carnivores remain. We need these weedy places, too, since they are where our children will learn to care for nature the way that we did when we were young.

Too many conservation organizations are single-mindedly oriented toward preservation of large tracts of near-pristine land. Certainly we need to preserve what we can of the intact ecosystems that remain on the earth. But our responsibility to the land as a whole extends beyond that to even the most radically-altered landscapes.

I think there is a need in Alberta for an organization of conservationists and naturalists with a broad base of regional and local affiliates that will take the first step toward protection of habitat diversity in the developed parts of the province. Perhaps it might look at the possibility of cooperating with sporting groups and landowners, possibly through the Bucks for Wildlife program. Perhaps we could start with the Western Irrigation District, possibly by paying a water rental to compensate the losses caused by leaving at least some pieces of ditchbank vegetation intact.

OPPORTUNISTIC PREDATION BY A BLACK-BILLED MAGPIE ON A COMMON STARLING IN CANMORE, ALBERTA

by D. F. Brunton
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The Black-billed Magpie is well-known as a scavenger for carrion, and even parasitizes large mammals (Linsdale, 1946; Stelfox, 1968). It has as well a largely exaggerated reputation for preying on the nestlings of other birds. In any event, it is an adaptable and opportunistic species, finding adequate resources to survive well even in the heart of our larger cities.

The magpie seldom tackles live prey of any appreciable size, unless that animal is at a decided disadvantage. An interesting example of this was observed on November 12, 1978, along the shores of Policeman Creek in Canmore, Alberta, by the author.

Several starlings were observed foraging through the shore-line of the creek, searching out insect larvae and human garbage. As a single magpie flew over, 2 of the 3 starlings flew up. The magpie dropped down quickly to where they had been and quickly began jabbing at a dark object upon which it had landed. From the loud and persistent squawks given each time the magpie jabbed fiercely, it became quickly apparent that the dark object was a live bird. Within seconds two more magpies flew from across the creek and landed by the first, although neither of the later arrivals participated in attacking the prey.

I quickly ran over and flushed the magpies off, to discover a single starling lying in the shallow water. Despite the injury inflicted by at least ten jabs (several at least observed to land in the head and breast area, the apparent target of the magpie's attack), the starling had enough strength to flutter off 3 or 4 m before I was able to capture it.

The bird was soaked through, with ice formed extensively on its tail and under-tail regions. No blood was visible and aside from its exhaustion and dishevelled appearance, it appeared to be in fairly reasonable condition. I took it home to allow it to dry out, warm up and the following day it was released, apparently with no long-term effects (except, in all probability, with a new respect for magpies!).

I can't be sure that the starling was in a flightless condition when attacked, but given the extent of ice on its feathers this seems likely. As it had been very cold (-10° to -20°C for three days) it further seems likely that this condition had developed relatively recently, or the bird surely would have died of exposure. It had probably become soaked while foraging along the shore for food, perhaps by falling in. In any event, the magpie would certainly have succeeded in killing the bird had I not intervened.

It may be that under normal circumstances a magpie would not attempt to kill so large a prey as a starling, particularly one with considerable strength remaining. The extra demands for food on the bird in such winter conditions may have encouraged this attempt.

LITERATURE CITED

Linsdale, J.M. 1946 in Bent 1964. Life histories of North American Jays, Crows and Titmice (Part I). Dover Publications Inc., New York.

Stelfox, D. 1968. A note on magpies and Rocky Mountain Big Horn Sheep. Can. Field-Nat. 82: 224.

BLACK-NECKED STILTS NESTING IN ALBERTA

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In 1977 Black-necked Stilts nested for the first time in Alberta, which was also the first time in this century in Canada. This exciting event is being scientifically reported elsewhere, but this fuller account, with photographs, should be of interest to Alberta naturalists.

On May 1, 1977, several members of the Edmonton Bird Club sighted two Black-necked Stilts amidst a flock of American Avocets at Beaverhill Lake 65 km east of Edmonton. A wave of excitement went through those interested in this observation. Two days later, another sighting of two Black-necked Stilts was reported on a pond near St. Albert, 13 km northwest of Edmonton. This proved to be a very brief visit, since the birds were not seen there again.

In the first week of June, four Black-necked Stilts were seen on the west shore of Beaverhill Lake. These birds were frequently seen in a very wet and muddy area, overgrown with Marsh Ragwort, in the corner of a recently-seeded field.

On the morning of June 5 a small group of birdwatchers went to the location, hoping to get a good look at the stilts. It was through their effort - and, of course, the birds' behaviour - that the nest, containing four eggs, was found. It was built on a mound of dirt about 3-5 cm above water level, well-lined with short pieces of old ragwort stalks. Several Avocet nests were also found in the vicinity, all on drier ground. The excitement had reached its peak; apart from one old and doubtful record in Saskatchewan, this was the first Canadian nesting. The group now decided to leave the area and, in consideration of the welfare of the birds, not give too much publicity to the exact location.

On June 9 a friend and I went birding in the area where the stilts had previously been seen, and were fortunate to see three of the rare birds flying around. We noticed the farmer had been busy ploughing the marshy corner, as drying weather had made it possible for him to reclaim his flooded land bit by bit. Of course he did not know about the nesting birds that meant so much to us, so we talked with him and he promised to avoid disturbing the birds.

On subsequent visits one could count on seeing three stilts, but we never saw the fourth bird again. After a few minutes, one always flew off into the marshy bulrushes outside the fence. The remaining two, obviously the nesting pair, kept us company. Several interesting distraction displays and broken wing acts were witnessed.

On June 17, two members of the Edmonton Bird Club, checking on the stilts, saw four birds and found another nest approximately 50 m west of the first nest. This nest contained 7 eggs. When news of this second nest reached me, I made use of the opportunity to photograph this unique occurrence. The first nest appeared to have successfully hatched, and at least one chick had been observed. What happened to the other eggs is not known, but they probably hatched and the chicks retreated directly into cover, as do other young shorebirds.

On the early morning of June 27 my wife Ria and I set out for Beaverhill Lake to try to photograph the stilts at this second nest. With considerable experience in

bird photography, I felt that it would be possible to successfully photograph the birds without any danger of desertion.

Upon arrival at the nesting area, we discovered only a small patch of Marsh Ragwort about 3 x 4 meters was left in the now-bare corner of the field. Smack in the middle was the stilt nest. The farmer had been careful indeed and ploughed right around the nest. Since this had not scared the birds, my small camouflaged blind was certainly not going to do any harm. A brief check of the nest showed all eggs were present and the adult stilts were in the immediate vicinity.

Setting up the blind took only a few minutes. I went into the blind and Ria started to walk back to the car. There she had to wait patiently until she saw my signal to pick me up again.

Within 15 minutes after she had walked away, a stilt approached, looked at the blind, walked to the nest and settled upon the eggs, no easy task with such long legs and so many eggs to cover. It was 8:00 am. Now I could study the stilts undisturbed. A crow flying overhead made the incubating bird "tighten up", appearing smaller, but with tilted head, the stilt watched as the crow was chased out of the vicinity by an Avocet.

At 9:40 am the bird on the nest became restless. I peeked through every possible hole in the canvas of the blind to find out what was going on. The other stilt was coming toward the nest with long strides. It is amazing how fast they cover ground with their long legs, at the same time "snatching up" insects left and right. Now near the nest, the incubating bird slowly rose with soft muttering sounds, stepped out of the nest and walked away with great dignity, throwing small bits of plant stalks over its shoulder, a typical behaviour I have observed in the Netherlands with Lapwing and Redshank. The new bird settled slowly on the eggs. A quick check on the departing bird found me staring almost eye to eye with the stilt, which now stood 1 m away from the blind. I could plainly see the ruby red colour of the eye which, at a distance, appears to be black. It was difficult to make a distinction between the male and female, although I thought one bird had somewhat browner plumage. Exactly the same process repeated itself at 11:08 am and again at 12:00 noon.

I then signalled and when my wife got out of the car, the bird on the nest immediately rose and sneaked away quickly. When far enough away from the nest, the bird flew up to meet the intruder. We left, concluding a successful morning.

A last visit was made on the evening of July 4 with two members of the Edmonton Bird Club. The nest now contained 2 empty eggshells, one egg pipped with the chick peeping inside, and 3 eggs unchanged. Upon a careful search of the area around the nest, we found the two hatched chicks, which we banded. On July 7 I was told of the finding of the remains of one young and three cold, addled eggs in the nest. I examined what was left of the partially-eaten chick and concluded its death was caused by a small rodent.

Why were these Black-necked Stilts here, and with them so many more American Avocets than usual? Their regular breeding range in the western United States experienced dry weather, and the little snowfall of the past three winters left many of these shorebirds with unsuitable nesting habitat. By coming farther north, it seems they found what they liked and, by doing so, Alberta and Canada had an unexpected nesting record.

NORTHERN SHORT-HORNED LIZARD IN SOUTHEASTERN ALBERTA

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In recent years the coulees of southeastern Alberta have been attracting the attention of naturalists as a habitat for many rare, unusual, or generally interesting plant and animal species. In 1976 I was fortunate enough to spend several months studying nature along coulee slopes in this part of the province. In this area I observed the Northern Short-horned Lizard (*Phrynosoma douglassi brevirostre* Girad), one of two lizard species found in the prairie region of Canada.

In Alberta, the Short-horned Lizard is found in locally abundant populations along the Milk River Valley and southeastern portions of the Red Deer River. Here the species is relatively scarce, often being restricted to exposed coulee rims or less commonly to rocky outcroppings along the coulee face (Lewin, 1963).

Five subspecies of Short-horned Lizards occur in North America. They differ in appearance from other lizards by having a short (3-10 cm) rather flattened body from which protrude numerous small stubby horns and one row of fringe scales along each side of its body. The subspecies found in Alberta is distinguished from the other short-horned subspecies by the dorsal bordered spots and temporal horns being shorter than wide at the base (Stebbins, 1966) (Fig. 1).

In my study area in southeastern Alberta, I observed individuals emerge with the first warm days of spring. In 1976, the earliest recorded sighting was 7 May. The lizards were rarely observed until July. A combination of cool wet weather was the primary reason for their late emergence. With warm and dry conditions in July and August they frequented the coulee ridge and less commonly along south-facing slopes.

By mid-summer the horned lizards formed apparent territories where individuals could be observed over the summer months. Here within this small area (ranging from approximately two or more meters) they spent feeding and sunning.

The lizards fed on a variety of insects, the most common being ants. Examination of feces revealed that they also consumed small flies and juvenile grasshoppers. Although feeding was observed during late afternoon and mid-morning, I did not determine whether these were the primary feeding times.

Individuals were typically not observed until late morning to mid-afternoon when an increased activity could be correlated with temperature. During this "active period" they spent the majority of time stationary, watching for prey or resting with half-closed eyes. Although they were normally quite languid creatures, they moved extremely rapidly when disturbed. When caught they would sit for hours on the palm of a hand or shirt sleeve seemingly without fear and enjoying the sun.

The timing and location of winter "hibernation" is unknown. In 1976 the last sightings in my study area near the Lost River area was 6 of September. Local

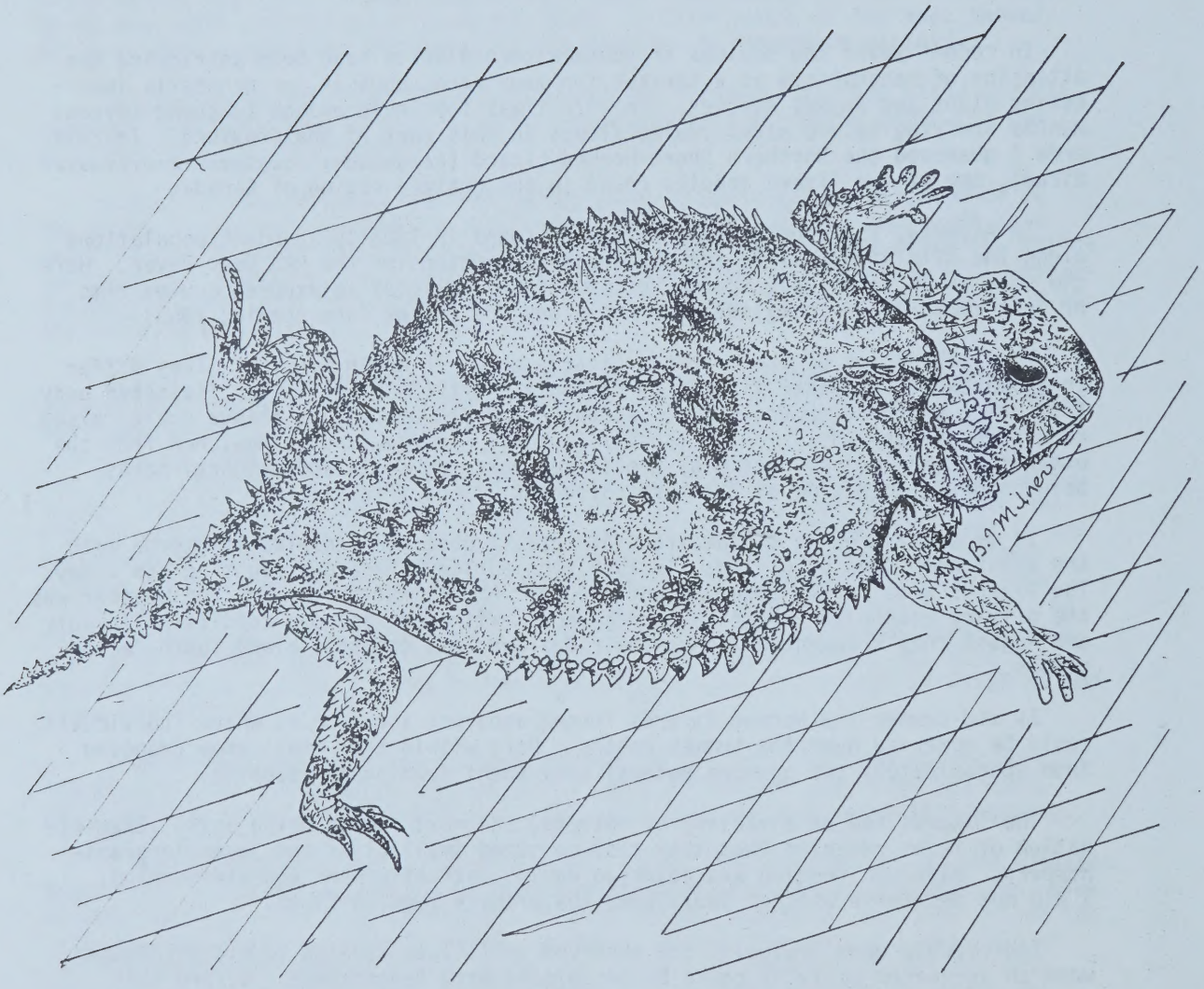

FIGURE 1. Northern Short-horned Lizard (*Phyrnosoma douglassi brevirostre* Girad).

residents report later sightings, the actual date being dependent on minimum temperature. I speculate that individuals "hibernate"[1]. along the coulee slope under rocks and sheltered crevases. Future observations, hopefully, will reveal more of the winter habits of this creature.

Although the Northern Short-horned Lizard is stated by the Alberta Department of Lands and Forests as being both rare and endangered in Canada, there is, as yet, no provision for their protection. In Alberta, the Wildlife Act is expected to be amended to include lizards. Although legal protection has not been extended to these animals the Alberta Government strongly discourages indiscriminate collections (Scott, 1977).

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1. Editor's note: True hibernation involves only warm-blooded animals (birds and mammals). However, the term is used frequently for over-wintering lethargy in reptiles, so is retained here in quotation marks. - M.K.M.

LITERATURE CITED

Lewin, V. 1963. The herpetofauna of southeastern Alberta. Can. Field-Nat. 77: 203-214.

Scott, C.A. 1976. Canada's prairie lizards pp. 127-129. IN T. Mosquin and C. Suchal (eds). Canada's threatened species and habitats; Proceedings of the Symposium on Canada's Threatened Species and Habitats sponsored by the Canadian Nature Federation and World Wildlife Fund (Canada), Ottawa.

Stebbins, R.C. 1966. Amphibians and reptiles of western North America. McGraw-Hill Book Co., NY, Toronto, London.

NATURALISTS' BOOKSHELF

LIFE STRATEGIES, HUMAN EVOLUTION, ENVIRONMENTAL DESIGN. TOWARD A BIOLOGICAL THEORY OF HEALTH.

1978. Geist, Valerius. Springer-Verlag, N.Y. 495 pp. Hardcover ($35).

Reviewed by R.M. Fisher

It is only every once in a decade or more that a cultural mutation occurs. One that produces a "Great Work", a "Classic", and above all, an adaptive strategy to aid mankind in his struggle for survival. Dr. Geist, a professor in the Faculty of Environmental Design at the University of Calgary, appears to be one of those cultural-historical mutants. He is not only an internationally eminent ungulate ethologist, a reputation based on his classic treatise "Mountain Sheep", but he is also a rare phenotypic scientist who has a genuine concern about the fate of mankind.

The title of the book alone is staggering. It is a synthesis of the inter-

disciplinary literature (approximately 1300 references cited) in which at least 11 different fields of study are integrated toward a biological theory of health. His synthesis is uncanny, his conclusions veritably apocalyptic and poignantly paramount to our world situation today. It is a book about human survival. "How do we move toward a more durable, survivable life style?". Some of the ideas in this book have appeared in print before under the title of his more popular book, "Mountain Sheep and Man". Dr. Geist begins his thesis by searching for a basic-level theory that goes beyond the work of the social critics (eg. Carson, Gidion, Galbraith, etc.), to look for alternatives and a tangible vision of the desirable future, with criteria that tell us if and when we have reached that state. "It is self-evident that for a society to thrive its individuals must be healthy.", and yet there is no theory of health. The disciplines of environmental health and preventitive medicine do not tell us how we ought to live to maximize health (and competence), except by telling us what not to do. To develop such a theory, Dr. Geist admits, is a prodigious task of which he can only attempt to begin.

Dr. Geist's insight into human behaviour, adaptations and evolution emanated from his investigations of the ecology and behaviour of large mammals in the winter landscapes of the northern Canadian Rockies. He noticed different environments produced different qualities of individuals of the same species. His major question in environmental design was "what environment ought we to design toward without robbing individuals of health". To answer this, one must know what an organism is designed to do by natural selection, what are its adaptive strategies and how do they come to be, and in what kind of environment did the species evolve. The ultimate question is in what kind of environmental conditions can health be maximized for that organism? These are the kinds of questions about *Homo sapiens* that this book attempts to answer.

Through a "systems approach" of simple deductive logic, Dr. Geist arrives at several conclusions regarding the evolution of man that even surprised himself as well as the anthropologists. His daring and challenging conclusions can only stimulate discussion and argument, for this he does not apologize. He concludes in the preface of the book by stating "If I saw wrongly, dear colleagues, what is the alternative?". He only hopes that he will not be misunderstood as an advocate of an idea, but rather thought of as a scientist with a theory to offer for critical analysis.

I should point out that this book is not a theoretical dissertation on human evolution alone. It is a fabulous reference book about all mammals, their biology, ecology, behaviour and evolution. The content of the text is mind-boggling. The chapter titles includes: Organism theory; the dictates of the genes, the meanings of environment; Cognition-Predictability; Communication; Aggression; Dominance displays: the biology of art, pride and materialism; How genes communicate with the environment - the biology of inequality; Mammalian systems; Life forms and extinctions; The ice ages; Prehumans; The *Homo erectus* stage; The first advance of the glaciers; On the evolution of modern man; From preglacial to artificial environments; Health, professionals and creative comforts.

This book is surely technical but astoundingly logical and readable to the keen layman. It is the type of book that can be read over and over, each time new ideas grow out of it and a new way of looking at things emerges. It is of excellent quality and over-priced, both of which are to be expected coming from Springer-Verlag. The grave misfortune of the book's elite qualities, is that it will not be readily available to students or the public. I would have like to see a paperback version selling for one-third the price of the hardcover.

This book is a must for higher grade environmental educators!

ADDITIONAL NOTES ON THE BIRDS OF THE KANANASKIS FOREST EXPERIMENT STATION AND SURROUNDING AREA

by John M. Powell
Northern Forest Research Centre, Environment Canada
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With the establishment of Kananaskis Country and the resulting increased interest in the area, it seems timely to update an earlier report on the birds of the Kananaskis Forest Experiment Station (KFES) (Powell et al., 1975). I am aware that a bird study for this larger area is currently under way; however, the information contained in this note may be of interest to this larger, more extensive study and to those who are aware of the earlier Kananaskis Forest report.

The earlier report listed 139 species of birds known to occur on the forest station and included two supplementary lists of 51 additional species recorded from the area immediately around the station and a further 35 species recorded from nearby areas (such as Banff to the west and Cochrane to the east) which could possibly occur on the station. In this note, attention is given mainly to new or interesting records for the station and the immediately surrounding area, although some recent reports from the Banff and Cochrane areas are included. This information has come largely from three sources. Professor Emeritus W. Ray Salt kindly brought to my attention an unpublished report he received in November 1953 of bird observations by Jim Grant of Vernon, B.C., a former Forest Insect Ranger who was stationed at the Kananaskis Forest Experiment Station in 1948-49. A second source became available in March 1976, when I was able to contact Marlene Caskey, now of Cobble Hill, B.C., who was employed by the Canadian Wildlife Films Company in 1972 and 1973 and made bird observations while at various camps on or near the Kananaskis Forest Experiment Station. Some of her observations have been published in the lists of the Calgary Field Naturalist, but the exact locations near Seebe were previously in doubt. Several other recent records from the Calgary Field Naturalist (CFN) are included as the third source.

In the following additional lists, the same sections are used as in the earlier report (Powell et al., 1975), and the arrangement conforms to the American Ornithologists' Union's Check-list of North American Birds. Several species have changed sections, while others are reported for the first time; two are 'new' breeding records for the station.

SECTION I. BIRDS RECORDED FROM THE KANANASKIS FOREST EXPERIMENT STATION

Cooper's Hawk. Grant reports this hawk as breeding on the station: "Adult female collected 1 May 1949 at KFES; was building nest. The nest was subsequently finished by another female and contained 4 eggs on 19 June 1949."

Bald Eagle. There are several recent reports of this species seen flying over the station; others from Mt. Allen (D. Jacques; October 28, 1975), Lac des Arcs (M. Powell; April 23, 1976), and Seebe (CFN, various records).

Sora. Grant reports one dead bird picked up at KFES, September 15, 1948, and one heard piping at the beaver pond, KFES, June 18, 1949.

Great Horned Owl. We earlier reported this owl as a "scarce resident". Grant, however, considered it to be "common at KFES through the year".

Common Nighthawk. Grant reports this species as breeding at KFES; a nest was found by R. Reid in June 1948.

Chestnut-backed Chickadee. This is listed by Salt and Salt (1976) as on the hypothetical list for Alberta. Grant comments: "Said by Hereford to occur in mature timber up Dutch Creek, west of the Gap Range Station. This is interesting in view of Ussher's record of the species at KFES" (Ussher, 1940).

Boreal Chickadee. Through correspondence it was confirmed that the observations of this species by Caskey (CFN 3(10), 1972; 3(11), 1972) were on the station and not outside as was assumed when the earlier report was prepared. In addition to the above reports, this species was seen again on October 12, 1972, (Caskey was absent from the station from late April to late September) and was recorded regularly at the camp until it was moved from the station in February 1973. Ussher (1940) also noted this species on the station as the Brown-headed Chickadee.

Purple Finch. Grant observed a pair at KFES on April 30, 1949, the male singing; the pair was still around on May 3.

Harris's Sparrow. Caskey observed a pair and described them in detail in her notes for October 28, 1972, although they had been observed earlier without positive identification. They were seen until November 5, 1972. There was a further recent report from Seebe on May 13, 1977 (CFN 9(2), 1977).

SECTION II. BIRDS RECORDED FROM AREAS ADJACENT TO THE KANANASKIS FOREST EXPERIMENT STATION

Arctic Loon. A single bird was seen on the Bow River near Morley on October 8, 1977 (CFN 9(7), 1978), but no description was given. Salt and Salt (1976) report this species as a fall migrant as far south as Calgary. Pinel and Butot (1978) state this is the fourth sighting for the Calgary area since 1961.

Pied-billed Grebe. Earlier reported as an uncommon migrant in this area (Powell et al., 1975) it was recently reported as breeding in the Banff area (CFN 10(3), 1978) and was also observed in the Jumping Pound area (CFN 10(4), 1978).

American Bittern. This was reported from the Bow Valley Provincial Park, June 4, 1978 (CFN 10(3), 1978).

Ruddy Duck. Caskey observed this duck on a slough near Rafter 6 Ranch on July 4, 1973, within 2 km of the station. It has been reported to breed in the Jumping Pound area (CFN 10(4), 1978).

Long-tailed Jaeger. Observed at the Upper Kananaskis Lake on August 17, 1975, by Bishop (1975; CFN 7(4), 1975). This species is on the Alberta hypothetical list (Salt and Salt, 1976).

Pygmy Owl. Grant heard one calling on the afternoon of November 3, 1949, on a back road between KFES and Jumping Pound.

Barred Owl. One was found dead at Morley on November 12, 1978 (CFN 10(7), 1979).

Steller's Jay. A single bird was seen in the Kananaskis Valley near Evan-Thomas Creek on January 18, 1976 (CFN 7(9), 1976; Pinel and Butot, 1978).

White-breasted Nuthatch. This has been observed at Canmore on several occasions (CFN 9(9), 1978; 10(1), 1978).

House Wren. Caskey recorded this species on June 1, 1973, when it had entered the main building at Rafter 6 Ranch and could not escape.

Rock Wren. This species was recorded at Canmore on June 19, 1977 (CFN 9(3), 1977).

Northern Shrike. Grant states that this is "Rare at KFES - only one record: Evan-Thomas Creek, 27 February 1949".

Nashville Warbler. This was reported from Mt. Laurie, 5 km northwest of Seebe, May 19, 1978 (CFN 10(3), 1978).

SECTION III. BIRDS NOT RECORDED FROM THE KANANASKIS FOREST EXPERIMENT STATION OR FROM THE IMMEDIATE SURROUNDING AREAS, BUT WHICH HAVE BEEN RECORDED FROM NEARBY AREAS, NOTABLY BANFF AND COCHRANE, AND COULD POSSIBLY OCCUR IN THE STATION

Wood Duck. Reported from the Cochrane area on April 11, 1976 (CFN 8(1), 1976).

Greater Scaup. Reported from the Cochrane area on October 8, 1975 (CFN 7(8), 1976; see Pinel and Butot (1978) for a further record.

Gray (Hungarian) Partridge. Reported from the Cochrane area in February and April, 1977 (CFN 9(1 & 2), 1977), and in July 1978 (CFN 10(4), 1978).

Whooping Crane. Reported from the Cochrane area, September 19, 1975 (CFN 7(5), 1975). A description was provided, although the large number (24) is questionable; possibly Sandhill Cranes (R. Butot, pers. comm., April 1979), which were reported by another observer that week.

Willet. Reported from the Cochrane area on April 27, 1977 (CFN 9(2), 1977).

Snowy Owl. Reported from the Cochrane area January 24, 1976 (CFN 9(10), 1978).

Loggerhead Shrike. Reported from the Cochrane area April 4, 1978 (CFN 9(10), 1978).

Palm Warbler. Reported from the Cochrane area October 2, 1978 (CFN 9(6), 1978).

Cassin's Finch. One pair reported from Banff on July 8, 1978 (CFN 10(7), 1978). No description of this species was provided; Salt and Salt (1976) mention its occurrence at Waterton Lakes National Park and near Jasper.

The assistance of R. Butot in checking some of the recent Calgary Field Naturalist bird observations is gratefully appreciated.

REFERENCES

Bishop, Albert. 1975. Sighting of wandering jaeger. Alberta Nat. 5: 84-85.

Pinel, Harold W. and Rudi J. Butot. 1978. Highlights of bird observations in the Calgary area, Alberta, 1971-1977. Blue Jay 36: 159-163.

Powell, John M., Tom S. Sadler and Margaret Powell. 1975. Birds of the Kananaskis Forest Experiment Station and surrounding area: an annotated checklist. Environ. Can., For. Serv., North. For. Res. Cent., Edmonton, Alta. Inf. Rep. NOR-X-133.

Salt, W. Ray and Jim R. Salt. 1976. The Birds of Alberta. Hurtig Publishers, Edmonton.

Ussher, R.D. 1940. Chestnut-backed Chickadee in the Alberta foothills. Can. Field-Nat. 54: 75.

OVERHEARD. . .

"While almost all men feel an attraction drawing them to society, few are attracted strongly to Nature. In their reaction to Nature men appear to me for the most part, notwithstanding their arts, lower than the animals. It is not often a beautiful relation, as is the case of the animals. How little appreciation of the beauty of the landscape there is among us! We have to be told that the Greeks called the world Beauty, or Order, but we do not see clearly why they did so, and we esteem it at best only a curious philological fact."

Henry David Thoreau, "Walking", 1862
from Common Sense, Number 3

RECENT PUBLICATIONS ON THE NATURAL HISTORY OF ALBERTA

Compiled by David Ealey

Adamik, R.S., A.W. Todd and L.B. Keith. 1979. Demographic and dietary responses of Red-tailed Hawks during a Snowshoe Hare fluctuation. Can. Field-Nat. 93: 16-27.

Anonymous. 1979. The Calgary Christmas bird count - Sunday, 17 Dec. 1978. Calgary Field Nat. 10(7): 212.

Anonymous. 1979. The wildlife reserve of western Canada's Christmas bird count. Calgary Field Nat. 10(7): 211.

Bailey, A.W. and H.G. Anderson. 1979. Brush control on sandy rangelands in central Alberta. J. Range Mgmt. 32(1): 29-32.

Barendregt, R.W. and E.D. Ongley. 1979. Slope recession in the Onefour Badlands, Alberta, Canada: an initial appraisal of contrasted moisture regimes. Can. J. Earth Sci. 16(2): 224-229.

Barrett, M.W. 1979. Evaluation of fertilizer on pronghorn winter range in Alberta. J. Range Mgmt. 32(1): 55-59.

Battrum, M.W. 1979. Natural history observations - other than birds. Calgary Field Nat. 10(7): 220.

Beland, P. and D.A. Russell. 1979. Ectothermy in dinosaurs: paleoecological evidence from Dinosaur Provincial Park, Alberta. Can. J. Earth Sci. 16(2): 250-255.

Boag, D.A. and P.S.M. Pearlstone. 1979. On the life cycle of Lymnaea stagnaglis (Pulmonata: Gastropoda) in southwestern Alberta. Can. J. Zool. 57(2): 353-362.

Boxall, P.C. 1979. Interaction between a long-tailed weasel and a snowy owl. Can. Field-Nat. 93(1): 67-68.

Butot, R. 1979. Natural history observations - birds. Calgary Field Nat. 10(7): 227-233.

Butot, R. 1979. Last sightings of fall migrant birds in the Calgary area - 1978. Calgary Field Nat. 10(7): 221-226.

Butot, R. 1979. Natural history observations - birds. Calgary Field Nat. 10(8): 251-254.

Cary. J.R. and L.B. Keith. 1979. Reproductive changes in the 10-year cycle of snowshoe hares. Can. J. Zool. 57(2): 375-390.

Chappel, R.W. and R.J. Hudson. 1979. Energy cost of standing in Rocky Mountain bighorn sheep. J. Wildl. Mgmt. 43(1): 261-263.

Dekker, D., R. Lister, T.W. Thormin, D.V. Weseloh and L.M. Weseloh. 1979. Black-necked Stilts nesting near Edmonton, Alberta. Can. Field-Nat. 93(1): 68-69.

Ebel, G.R.A. 1979. Wabamum Lake Christmas bird count: 1978. Edmonton Nat. 7(1): 12-15.

Ebel, G.R.A. 1979. Summary of bird observations: December 1978 through January 1979. Edmonton Nat. 7(1): 25.

Fisher, R.M. 1979. Two "heads" are better than one: behavioural adaptations of a caterpillar. Calgary Field Nat. 10(7): 214-216.

Flannagan, J.F., B.E. Townsend, B.G.E. deMarch, M.K. Friesen and S.L. Leonhard. 1979. The effects of an experimental injection of methoxychlor on aquatic invertebrates: accumulation, standing crop and drift. Can. Entom. 111: 73-89.

Folsom, T.C. and H.F. Clifford. 1978. The population biology of Dugesia tigrina (Platyhelminthes: Turbellaria) in a thermally enriched Alberta, Canada lake. Ecology 59(5): 966-975.

Fox, R.C. 1979. Mammals from the Upper Cretaceous Oldman Formation, Alberta. I. Alphadon Simpson (Marsupialia). Can. J. Earth Sci. 16)1): 91-102.

Fox, R.C. 1979. Mammals from the Upper Cretaceous Oldman Formation, Alberta. II. Pediomys Marsh (Marsupialia). Can. J. Earth Sci. 16(1): 103-113.

Fox, R.C. 1979. Mammals from the Upper Cretaceous Oldman Formation, Alberta. III. Eutheria. Can. J. Earth Sci. 16(1): 114-125.

Funk, A. 1979. Leciographa gallicola n. sp., a putative parasite on aspen galls. Can. J. Bot. 57(1): 4-6.

Golden, D.L. and R.H. Swanson. 1978. Snow accumulation and melt in small forest openings in Alberta. Can. J. Forest Res. 8(4): 380-388.

Kamp, J.W. 1979. Taxonomy, distribution and zoogeographic evolution of Grylloblatta in Canada (Insecta: Notoptera). Can. Entom. 111: 27-38.

McNicholl, M.K. 1979. Head markings of Downy Woodpeckers as individual markers. Calgary Field Nat. 10(7): 217-218.

Michener, G.R. 1979. Spatial relationships and social organization of adult Richardson's ground squirrels. Can. J. Zool. 57(1): 125-139.

Morgenstern, E.K. 1978. Range-wide genetic variation of black spruce. Can. J. Forest Res. 8(4): 463-473.

Nordstrom, W. 1978. Notes on some uncommon rails, wrens and warblers of Alberta. Blue Jay 36(4): 200-206.

Park, J.L. 1979. The breeding bird survey in the Edmonton area. Edmonton Nat. 7(1): 8-11.

Pease, J.L., R.H. Vowles and L.B. Keith. 1979. Interaction of snowshoe hares and woody vegetation. J. Wildl. Mgmt. 43(1): 43-60.

Pilarski, L.M. 1979. Christmas bird counts past and present. Edmonton Nat. 7(1): 4-7.

Schowalter, D.B. and J.R. Gunson. 1979. Reproductive biology of the big brown bat (Eptesicus fuscus) in Alberta. Can. Field-Nat. 93(1): 48-54.

Swailes, G.E. and D.L. Struble. 1979. Variation in catches with sex attractant of the clover cutworm, Scotogramma trifolii and army cutworm, Euxoa auxiliaris (Lepidoptera: Noctuidae), due to trap location. Can. Entom. 111: 11-14.

Tauer, C.G. 1978. Sween fern resistance in jack pine seedlings: geographic variation. Can. J. Forest Res. 8(4): 416-423.

Van Camp, J. and R. Gluckie. 1979. A record long-distance move by a wolf (Canis lupus) J. Mammal. 60(1): 236-237.

Wang, L.C.H. 1979. Time patterns and metabolic rates of natural torpor in the Richardson's ground squirrel. Can. J. Zool. 57(1): 149-155.

FAN NEWS

FAN SUMMER FIELD TRIP

The Federation's 1979 summer field trip will be held at Cold Lake, Alberta, June 23 and 24. We will camp at Cold Lake Provincial Park 1-1/2 miles east of the town of Cold Lake.

This is an excellent area to observe many of the more eastern and northern breeding birds, including Short-billed Marsh Wrens, Yellow Rails, and 19 species of warblers known to breed in the park. We will also have a chance to observe the vegetation of the boreal forests.

On Saturday and Sunday, early risers can take part in pre-breakfast (6:00 am) early morning walks. After breakfast on both days (8:00-8:30 am) morning field trips are scheduled, and on Saturday, an afternoon trip, starting at 1:00 pm, is planned. There will be choices of specialization - all-bird, all-botany, or bird and botany - offered for some field trips. If interest is shown, a search for Barred Owls will also be offered. If you have a canoe or boat, bring it, as there will be a boating trip to observe waterfowl (Western and Red-necked Grebes nest in a nearby bay). It is recommended that you either bring boots or be prepared to get wet feet in some area.

Field trip leaders include Eric Tull (phone 436-8772 or 488-4832, office), Terry Thormin (phone 452-3244 or 452-2150, office) and Al Wisely.

FAN FALL MEETING, SEPT. 22-23, 1979

The Federation's 1979 fall meeting will be held on the week-end of September 22-23, 1979, in Stettler. Hosted by the Buffalo Lake Naturalists, meetings will be held in the social room of St. George's Anglican Church, 4817 51 St. Good cafes are nearby, as well as five motels, two hotels, campgrounds and private accommodation. Saturday, 9:30 am, a tour of the Town and Country Museum is scheduled. A noon luncheon will be provided. An afternoon trip to the Buffalo Lake area is planned. Evening meal on your own. Arrangements for the evening program are not as yet completed. Sunday morning we will meet at the Town and Country Mseum, S.W. Stettler, for the day's field trip which will include the Narrows of Buffalo Lake, Tail Creek, Metis cemetary, Mackenzie crossing, and, time permitting, east to Big Valley Country and the proposed Natural Area east of Rumsey.

For additional information contact Ms. Virginia Maitland, Buffalo Lake Naturalists, Box 1888, Stetter. We hope to see you there.

FAN AND FALCONRY

Following is the text of a letter sent by our President, Mike McIvor, to Hon. Al Adair, Minister of Alberta Parks, Recreation and Wildlife, following discussions at our January meeting.

Dear Mr. Adair:

The Federation of Alberta Naturalists held their Annual General Meeting at Camp Caroline January 14 and 15. At the conclusion of a lengthy discussion concerning falconry, the Board of Directors, with one director abstaining, passed the following motion: 'The Federation of Alberta Naturalists does not support the legalization of falconry in Alberta'.

This subject, which fairly recently has become an issue of more general interest, was brought to our attention at our fall meeting in Edmonton in September. At that time we agreed to review our existing policy on falconry and to consider the issue in much greater depth than had been done previously. In the ensuing months many of our directors and many members in our local clubs found that this topic provoked considerable interest and at time controversy. It has proved to be a very worthwhile exercise. People examined the historical background of falconry; they re-examined their own feelings and motives with regard to wildlife and the human use of wildlife.

There was widespread concern about the difficulties of regulation and enforcement with respect to the use of raptors for human sport. However, I feel it is important for me to stress that there was at all times a sincere sense of respect towards the efforts of people like John Campbell of Black Diamond and others who have made such a signficant contribution through their efforts at rearing birds of prey in captivity in cooperation with government agencies' conservation programs. We wish to extend our support to the continuation of those programs, for we consider them to be extremely valuable.

Many F.A.N. members and directors were troubled by the question of manipulating wildlife for the use of humans in an extension of sport hunting and, although even here there was lively discussion, the many concerns finally coalesced into a concensus which led to our motion stating that we do not support the legalization of falconry in Alberta.

We understand that you and your department have this issue under consideration and wanted to inform you of the position we have taken.

Thank you for your attention. Best wishes in 1979.

Yours sincerely,

Mike McIvor, President
Federation of Alberta Naturalists

Following is Mr. Adair's reply.

Dear Mr. McIvor:

Thank you for your very interesting letter outlining your Association's views on falconry. Your letter, supporting our present position is very timely. At the same time, I am glad you recognize the efforts of a few people in Alberta who have cooperated substantially with the Fish and Wildlife Division to develop a raptor program. We will keep you informed of the outcome of our review.

Sincerely yours,

J. Allen "Boomer" Adair
Minister of Recreation, Parks and Wildlife

PRESIDENT'S PAGE

I am sorry to say that this issue of the Alberta Naturalist is the last one which will be prepared by our present editor, Virginia Lang. Virginia is about to be married and has decided, understandably, that she cannot retain the responsibility for producing the AN and her relatively new responsibilities as corresponding secretary, along with working a far and raising a "ready-made" family.

FAN has been extremely fortunate with our editors over the years. Martin McNicholl took over editing the AN when Virginia "retired" in 1976. When Martin left the province, Virginia was willing and able to step back in immediately as his replacement. Once again, the positions are reversed. Martin has returned to Alberta and I am delighted to be able to report that he has agreed to take over from Virginia as editor, ably assisted by assistant editor, David Ealey.

There will be many opportunities in the months and years ahead to offer support and encouragement to Martin. However, I would like to use this space to express on behalf of F.A.N. and all our members, our warm thanks and appreciation to Virginia Lang. She has made a significant contribution to our organization through the way she has managed and guided our major publication to ever higher levels of quality. On behalf of everyone I want to wish Virginia all the best in the future and to assure her that we will be awaiting any further contributions that her new life may permit her to make to F.A.N.

"Is the grizzly bear more important than people? That seems to me a fundamental issue." Those are the words of the President of the Lake Louise Ski Area who was responding to a report on the effects of development in Lake Louise on grizzly bears, commissioned by Parks Canada and released late in March. Incidentally, the report proposes that an ideal solution would be not to just limit development in the area, but to remove existing facilities.

I draw your attention to these remarks, not because I hope to stimulate your response to the planning proposals for Lake Louise, since the deadline for submissions was May 1 (I hope many of you did find the time to prepare a short submission) but because it is a fundamental issue in a way, and one in which naturalists often find themselves out of step with the main parade of society. Of course the essential question does not deal with the relative importance of bears or people, but with the degree of responsibility which human beings are willing to accept for the continued existence and well being of other forms of life.

It is a question which must be asked more and more often as man and his technology extend their influence and impacts. As individuals we will react in varying and personal ways depending on our perception of the problems. But I feel that it is very important, as naturalists, that we continually stress our ethical position.

We must demonstrate that we do, in fact, recognize stern responsibilities arising from our relationships with the land and the other forms of life which share it with us. Our strength will grow with our willingness and ability to articulate those harmonious relationships with land and wildlife which may be called ethical and which form the basis for true conservation.

EDITOR'S PAGE

I have before me a copy of the 15-page "FAN Newsletter Volume 1 Number 1, January-February 1971", edited by Dr. Tim Myres. (Tim was also our first President, elected at FAN's First Regular Meeting on June 27, 1970.) The contents include a brief history of FAN, FAN news, club news, provincial conservation news, biographical sketches of two early-day Alberta naturalists, editorial features, recent publications of interest to Alberta naturalists, requests for information, a membership list, and several short notes dealing with the conservation issues of the day. In short, 15 pages of interesting and varied reading.

Since that maiden issue, the AN has been guided by, in chronological order, Dave Spalding, myself, Martin McNicholl, myself and David Ealey, and henceforth - once again - Martin McNicholl. During these nine years, the AN, reflecting the growth and ever-expanding sphere of FAN activities - has changed considerably. The format has evolved into a booklet, the size has expanded to some 60 pages.

Back in December of 1973 - the first issue I edited - I made some rather ambitious statements: "Alberta needs a strong provincial publication. It is my intention that the AN will fill this need. I hope we can, within two or three years, produce a publication comparable to the Saskatchewan Natural History Society's Blue Jay." While the AN may not have attained the quality - or circulation - of the Blue Jay, I hope readers agree that the AN does fill the need, more so every year, for a strong provincial publication. At the same time, I hope the AN provides the same interesting and varied reading as the Volume 1 Number 1 Newsletter did.

Everyone who has been associated over the years with the production of the AN - including Tim Myres, Dave Spalding, Martin McNicholl, David Ealey, Lyman Matthews and myself - have put much thought, many long hours and hard work into the AN. However, I believe much of the credit for the steady improvement of our publication belongs to those among you who have supplied us with material, increasingly first rate, to publish - our contributors. I think I can speak for both past and future editors when I offer sincere appreciation and thanks to those of you who have submitted material over the years which has helped the Alberta Naturalist not only meet the need for a strong provincial publication, but has provided interesting and varied reading for our subscribers.

I've enjoyed this stint of editing but I must say I'm looking forward to the luxury of having the mailman delivery my copy of the AN and being able to read each page as "fresh material" rather than "well-read-and-sometimes-sweat-stained" by the time the finished product reaches me.

I want to thank David for his invaluable assistance. I know that, under the able guidance of Martin and David, the AN will continue to reach ever higher levels of quality.

- Virginia Lang

CLUB NEWS

CALGARY FIELD NATURALISTS' SOCIETY

CFNS has, as usual, a busy spring/early summer field trip schedule, with outings planned to the prairies to view migrating waterfowl, walks in natural areas, and a hawk watch in the foothills.

The Bird Study Group is moving ahead with the following projects: studies of natural areas in the Restricted Development Zone surrounding Calgary; a birdwatcher's guide for the Calgary district; and participation in May Day species counts.

Recent activities of the Natural Areas Group include: (1) continuing the updating of the Scientific Reports on Natural Areas, published in 1973 and 1974; (2) choosing two possible new natural areas to study - Bearspaw Reservoir, west Beddington Creek, and sloughs in the Shepard area Utility Corridor; (3) a submission to Parks Canada on the planned development for Lake Louise; and (4) a submission to City Council opposing reclassification of land in Nose Hill Park for residential development.

EDMONTON BIRD CLUB

EBC summer meetings will be held: June 9, Wagner Bog, meet at the SE corner of Centennial Mall, 8:00 am, Leader: T. Thormin; June 23-24, Cold Lake (see FAN News); July 8, Cross Lake Provincial Park, approximately 40 miles northeast of Westlock, meet 9:00 am at the boat launch, Leader: Graeme Greenlee (436-0038); August 5, Redwater (details to be announced in a later EBC newsletter), leader Graeme Greenlee.

The American Ornithologists' Union's 1981 meeting will be held in Edmonton during August of that year. The EBC Executive has voted to give as much support at possible in organizing field meetings.

EBC members are looking forward to the production of Bob Lister's book about Beaverhills Lake, scheduled to be available in the fall.

- Submitted by David Ealey

LETHBRIDGE NATURALISTS' SOCIETY

Our 1979 winter and spring programs were interesting and productive with membership increased to over one hundred, forcing a move to large premises in the Lethbridge Community College.

Direct contact has been made with the Alberta Ecological Survey with our group studying both Ecological Reserves and Natural Areas. We hope to make progress this summer.

This winter twelve indoor meetings were held, plus several winter outings, when members took to skiis or snowshoes. In May we will host FAN members and from then until September have planned twelve field trips. Any FAN members visiting in southern Alberta during the summer and wishing to participate in LNS outings may call Duncan Macintosh (327-5466) for particulars.

The FAN Phenology Project is also gaining steady support with a larger area being covered this year. For the first time since the Breeding Bird Survey began in 1968, our society this year will be able to cover all the surveyed routes between the 49th and 51st parallel and one above the 51st parallel. Twelve eager birders are keenly waiting for early June to cover the six routes in southern Alberta.

Our second annual banquet will be held on November 16, 1979. Dr. Gordon Chalmers will speak on "Images of East Africa".

March 18, 1979, saw the first bluebirds back in Lethbridge, with one pair taking up residence in the city.

RED DEER RIVER NATURALISTS

The Red Deer River Naturalists sponsored a PUblic Forum on February 22, to which the three provincial candidates were invited. A list of topics such as preservation of natural areas, sewage effluent as fertilizer and growth were given to the candidates beforehand. Questions from the audience showed concern for Willmore and the East Slopes. The election results were disappointing for environmentalists, but we must continue to voice our concerns.

Sightings have been made at a feeder near Red Deer of a bird which may be a gray-headed chickadee. Mr. David Jones, an avid birder from Missouri, has prepared field notes but definite confirmation has not been made at this time.

TRUMPETER SWAN NATURALISTS

The TSN's missed our first meeting after our annual meeting in January as the weather and roads were impassible. However, we met in March and April with good turnouts both nights.

One of our members, Ellen Brown, showed us slides for our March meeting and Paul Pivert, one of our photographers, gave us a display and talk on different equipment for taking wildlife and nature pictures. These were both very entertaining and informative.

Our club crest has been made up and is ready for sale at $3.00 each. If anyone would like one, please send a cheque or money order to me, Ellen Craig, at R.R. #1, Wembley, Alta. TOH 3SO, and I will send one to you. The crests have a pale blue background with a white Trumpeter Swan flying across it and 'Trumpeter Swan Naturalist Society' in black on white. You don't need to be one of our members to have one, but if you would like to be, and receive our monthly newsletter, our dues are $5 for family, $4 for single and $2 for junior memberships.

NOTES AND NEWS

ENVIRONMENTAL STUDY KIT AVAILABLE

The Alberta Fish & Wildlife Division, under the direction of Daniel Stoker, has prepared an excellent in-depth through a games process study of the Environment for the province of Alberta. A wealth of material comes with the kit from the Department and the process is geared for the Grade VII level. It is hoped many teachers will take advantage of this kit. It can be obtained from the Department of the Environment, Communications Branch, Oxbridge Place, 9820 106 Street, Edmonton, Alta. T5K 2J6.

PLATEAU MOUNTAIN PUBLICATION AVAILABLE

Investigations of alpine permafrost in the Western Cordillera of Canada were initiated in 1974 on Plateau Mountain located in the front ranges of the Rocky Mountains 80 km southwest of Calgary. The results of these investigations have been published under the following title: Plateau Mountain: A case study of Alpine permafrost in the Canadian Rocky Mountains by S.A. Harris and R.J.E. Brown, reprinted, with permission, from Vol. 1, Proceedings, 3rd International Conference on Permafrost held in Edmonton, Alberta, 10-13 July 1978, pp. 385-391 (DBR Paper No. 811). Copies can be obtained by sending 10¢ per to the Division of Building Research of the NRC, at Ottawa, K1A 0R6, Order Number NRCC 17087.

COLOR SLIDES OF MAMMALS AVAILABLE

The American Society of Mammalogists has established, as a public service, a slide library containing 325 high-quality, low-cost (70¢ each) slides of mammals of the world. For a catalogue send $1.00 to Dr. J.A. Lackey, Chairperson, Mammal Slide Library Committee, Rice Creek Biological Field Station, State University of New York, Oswego, N.Y. 13126.

CONSERVATION NEWS

DOUGLAS PIMLOTT FUND

Innis College, University of Toronto, has established a scholarship in memory of the late Doug Pimlott. This scholarship will be awarded to an undergraduate student, who like Doug in his own life, combines high academic achievement with dedicated social involvement in environmental concerns. Among Doug's many contributions, he was successful in establishing an Environmental Studies Program at Innis. The Programme for which he worked tirelessly in the last years of his life is not designed as an in-depth specialist training but one in the spirit of a liberal education concerned with the environmental issues that face us all.

Contributions should be made payable to the Douglas Pimlott Fund, University of Toronto, and forwarded c/o The Principal's Office, Innis College, 2 Sussex Avenue,

Toronto M5S 1J5. Any amount, however modest, will be appreciated, and a receipt for tax purposes will be sent to you.

THE SOCIETY FOR THE PROTECTION OF PUBLIC OPEN SPACES

The Society for the Protection of Public Open Spaces is a non-profit organization, incorporated in Alberta under the Societies' Act. The Society recognizes many kinds of "open spaces" but the most obvious - and possibly the most endangered - are the "road allowances". The Society believes that road allowances ought to be considered as open spaces and left for the use of the general public.

Road allowances, long the habitat of many upland birds like the Sharp-tailed Grouse, were, for the most part, respected by farmers until the last twenty years. Many now have disappeared to become part of the neighboring cultivated fields. The same is true of hillsides, coulee banks and other marginal lands.

Road allowances are a special kind of crown land. So far as I can determine, they are the only type of land which western Canada has that approaches the English institution known as the "common" or "common land". The sale of a quarter-section of land does not carry with it the right to use the portion of road allowance lying next to it for any purpose but that of a public road. Those who wish to help or otherwise become involved should contact Allen Ronaghan, Box 120, Islay, Alberta.

REQUEST FOR INFORMATION

WHITE-CROWNED SPARROW STUDY

Dr. Ross Lein has begun an investigation of song variation in White-crowned Sparrows in western Alberta, and is interested in locating as many study sites as possible. If you know of accessible localities in western Alberta or adjacent B.C. which have breeding populations of these birds (singing males in June or July is a good indication), please write to Dr. Lein at the Department of Biology, University of Calgary, Calgary T2N 1N4, or phone him (collect) at 284-6549. While precise locality information would be most valuable, any past records were be gratefully received.

JUNIOR NATURALISTS' PAGE

WILD ROSE CATEGORY FAN ESSAY CONTEST WINNER

THE WILD ROSE

by Lisa Schmidt, Grade 2

The wild rose is pink. It is two to three inches across. It has five green leaves and five pink spreading petals. The stem is prickly to touch.

I like the wild rose because it stands for Alberta, it is nice to smell, and it is a pretty flower. I think the wild rose should be left for others to enjoy.

The wild rose can be found growing almost anywhere in the country side of Alberta.

HELEN SCHULER MEMORIAL CATEGORY FAN ESSAY CONTEST WINNER

THE WOLF

by Daniel A. Morris, Grade 7

As social an animal as the wolf is, it would not be surprising to find that courtship, mating and the raising of the young is a complicated business. The wolf is an extensive traveller during all months and is most active at night time. It eats mainly large animals such as moose, deer and elk. It is hard to hunt and kill large animals such as these but the wolf manages to do so. Each and every facet of the wolves' lives is intriguing and most interesting.

WOLF PERSONALITY

Personality is related to the particular social nature that the wolf has. Its strongest personality trait is its capacity for making emotional attachments to other individuals. This capacity for emotional attachment is the main reason for the formation of the pack as a basic unit in wolf society. If they can, wolves generally avoid fights with dogs or man. They show submissive behavior by crawling on their stomachs and turning their belly up. However, a cornered or wounded wolf will not necessarily be non-agressive. Wolves are most agressive when they are harrassing prey, meeting strange wolves or protecting the den and pups from predators.

INTELLIGENCE

Wolves have been noted to have a good memory by people who have done research on them. They seem to learn to prey on the more easily obtainable species in their area instinctively. They also have the ability to reason and to remember. Stanley Young, co-author of the book, "The Wolves of North America" cited reports that during the early bison hunts, wolves learned to head toward the sound of gunshots and then wait until the hunters had skinned the bison and left so that the wolves could eat the remaining bits.

WILDERNESS AND FEAR

The wolf is one of the wildest and shyest animals in the northern wilderness according to experts. This doesnot mean that it will not become accustomed to man. For example: they become dependent on livestock as a food supply and will learn to know man and his movements in that area. One reason that wolves are not too often seen on excursions is that the scent of man can cause a fearful and rapid avoidance of the area.

PHYSICAL CHARACTERISTICS

Wolves are large wild dogs that hunt, kill, attack and pursue and eat animals larger than themselves. The wolf is the largest member of the dog family, and has forty two teeth. The build of the wolves' legs aids greatly in making the wolves travel swiftly to far points. Wolves walk on their toes rather than on the entire sole of the foot, and the large heel pads allow it to be able to run as fast as a deer. Wolves' pelts vary in color almost more than any other species. The color is dependent on the outer or guard hairs. A difference in climate can change the density of the hairs and affect the color. Wolves, dogs, and other members of this family have a special tract of long erectile hairs, the mane, along the middle back and when one is angry, one can see these hairs stand on end. The color usually ranges from grey and greyish-brown to black and reddish-brown. The color is darkest on the back and palest on the under side of the body and the lower half of the legs. The average wolf ranges from four to seven feet in total length and stands from 19 - 38 inches at the shoulder in height. It weighs from thirty to one hundred pounds and as a rule the females are twenty per cent smaller than the males in the pack.

EVOLUTION

The wolf family has a long history of development and specialization from a general carnivore which roamed the earth about one hundred to one hundred and twenty millions of years ago. Probably the wolf and its prey species (hoofed or ungulates) all evolved from a common ancestor that lived a few million years ago. Both kinds of animals became adapted to fast and long distance running on open plains and both developed relatively a high intelligence level. Both descend from ancestors which lived in the forest.

CLASSIFICATION AND GENETICS

The wolf is a member of the order of mammals known as the Carnivora. The wolf's own family is Canidae. As the name of the order implies this group has a common food habit and pattern. Wolves can breed with dogs and there are incidents of this happening over the years. Wolves breed once a year.

DISTRIBUTION

At one time the wolf was found in North America, Europe, Asia (including Arabian Penninsula) and Japan, with the exception of vast deserts and high mountain tops in these regions. The habitat today includes all the Northern Hemisphere with the exception of deserts and tropical rain forests.

ECOLOGICAL NICHE

The ecological niche of the wolf is that of the northern predator upon large mammals. Besides the wolf and man, the only other predators that regularly prey on large mammals of the Northern Hemisphere are the cats - tigers and leopards in Asia and Mountain Lions in North America. All animals that prey on large animals weigh as much as the animal or else hunts in packs. Because the wolves prey on animals quite a bit larger than themselves, they usually hunt in packs.

POSSIBLE LIMITS ON PACK SIZE

Following are four factors that may affect pack size: (1) The smallest number of wolves that can locate and kill safely and efficiently. (2) The largest number that could feed effectively on prey (e.g. not all of a pack of sixty wolves could feed effectively on a one hundred and fifty pound deer). (3) The number of other pack members with which each wolf could form a social bond (the social attachment factor). (4) The amount of social competition that each member of a pack could accept (the social competition factor). Although a pack usually functions as a unit sometimes members do split off for a while, or the entire pack may break into smaller groups for various reasons.

COURTSHIP AND MATING

The urge to mate does not occur in wolves until they are around the age of twenty-two months. Before female wolves actually come into heat, affectionate behavior consists of mutual sniffing, head rubbing, snout biting, or snout grabbing. This continues until the actual mating. As early as six weeks before the actual mating in wolves, blood may start seeping from the vagina of a sexually mature female wolf. This is a phenomenon peculiar to wolves, and a few other members of this family. The breeding season of the wolf occurs from late January through to April, depending on the latitude, wolves in the highest latitude generally have the latest season. Ovulation in the wolf most likely occurs near the end of the eastrus. The litter size of wolf pups varies but it is mainly in the four to seven range.

DENNING

Pregnant wolves usually finish the digging of dens as early as three weeks before the birth of their young. Wolves seem to build their dens in sandy soil. Sometimes they originate their own dens or enlarge dens of other animals. Wolf dens are usually on a hill, ridge or other rise. Wolves prefer the den site to be near water.

PUPS AND CARE OF THE YOUNG

Newborn pups are deaf and blind, dark fur with small ears, rounded heads, and blunt noses. Each pup weighs about one pound. The bitch wolf constantly stays with her pups during the first few days after birth. The male wolf brings food to the bitch and the pups. All of the pack members may help feed the young and the female. Often food is kept in a cache near the den.

THE WOLF'S WANDERINGS

The wolf is kept fed be his feet. In the summer, wolves usually begin travelling in the early evening and return during the night or by late morning. Probably wolves are more active at night because it is too hot during the daytime. In the winter wolves are active at all times of the day. The usual gait of the wolf is a steady and tireless trot.

EFFECTS OF WOLF PREDATION

The wolf keeps its prey in check. It kills the young, old and the sick. If you took wolves away from an area of the animal upon which the wolf preys, the animal would soon become over populated and would become diseased and suffer from starvation.

FACTORS HARMFUL TO THE WOLF

Parasites are a phenomenon in which one animal is helped and one is harmed. Parasites do not always kill the animal outright. Wolves have external and internal parasites which include flukes, tapeworms, roundworms, ectoparasites, lice, fleas, mites, ticks, tongue worms and flies. These all are harmful to the wolf depending upon how badly it may be infected with the certain parasite.

DISEASE AND PHYSICAL DISORDERS

Most knowledge about diseases and disorders of the wolves are found through autopsies performed on wolves which have died in captivity. Some diseases which wolves get are: rabies, distemper, arthritis and other diseases which have not been sufficiently studied to provide much information about them. Wolves could receive injuries by the animal it preys on and a good kick from a moose or other large prey animal of the wolves could cause damage. Wolves could suffer from malnutrition if they had diseases or if man killed off most of his food supply. Starving wolves could be killed by their prey in an attempt to kill it. If the wolves did not get enough to eat and had nursing pups they could also suffer from malnutrition.

PERSECUTION AND EXPLOITATION BY MAN

All of the above elements are natural persecutions of the wolf and the wolf has survived these. But man and his devices threaten to wipe the wolf off the face of the earth. Some of the devices man uses are: steep traps, pits, corrals, deadfalls, ice box traps, edge traps, piercers, fishhooks, snares, set guns, ring hunts, drives, hamstring and lassoing, the use of dogs, stalking, den hunting, professional hunting, bountying, poisoning, helicopters, and airplane hunting. This is quite a list compared to the wolf's natural predators.

FUTURE OF THE WOLF

Quite a few years ago people hated wolves and wanted to wipe them out. Recently, a large group of people are being heard from that want to half the destruction of the wolf and keep him from being an endangered species. As a part in the food chain the wolf plays an important part as a predator. The wolf controls sick, old, crippled animals from making their groups weak, and sickly or mangy. Nature lovers and sportsmen class the wolf as a pretty sight and not as a species to be exterminated. Another value of the wolf is for the use of finding its place in the food chain and its place in the ecosystems. At present in some regions wolves are protected and in others the wolf is persecuted without mercy or a second thought. In Europe and Asia wolves may be set aside and protected or else have limited hunting on reservations. In Canada the process is taking place and in the U.S. forty-eight states list the wolf as endangered and two do not.

CONCLUSION

The wolf is a necessary part of a food chain and of a larger ecological system and therefore is very necessary for the whole of nature. It is hoped that through information being spread through the improved media systems of the world that the entire world will join together to grant "Peace on Earth" to the noble beast called "The Wolf".

Bibliography: Mech, L. David, The Ecology and Behaviour of an Endangered Species; and Chalane, Victor H., Mammals of North America.

OWL HIDEAWAY DISCOVERED

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by Fred Schutz
R.R. #2, Bluffton, Alberta TOC OMO

Imagine, if you will, that you are a Great Horned Owl. You have had a good night's hunting, and just before dawn you settle yourself for a long morning snooze, up against the trunk of a big old spruce tree, hidden under dense branches where you figure you can't possibly be detected from above or below.

Then, just after sun-up, a snoopy magpie hopping from branch to branch spirally down the tree, almost bumps into you. His reaction is immediate and loud, and you know, with a sinking feeling, that there will be no more sleep and no more peace for you this morning. That magpie flops over to the next tree and sits there alternately spouting insults at the top of his roupy voice and yelling "Owl!" to all who will listen.

Within seconds two more magpies and a blue jay have appeared from nowhere, and from far off you year the raucus caw of a crow, and you know by the excitement in his voice that he has heard the call and is coming full steam. You huddle a little closer against the tree and hunch your head down into your neck feathers, but you know it's no use. Blabbermouth number one has poked his ugly black face in under the branch to show the others where you are hiding, and they all move in closer, and one by one take a look at you, and you feel like Godiva with a haircut.

By this time the big, bullying crow has arrived and others are right behind him, adding their rude and sometimes vulgar croakings to the hullaballoo. Why, you wonder, do those stupid crows think they have to be loud and abusive to get on in this world? You don't understand crow any too well, and you are far from fluent in magpie, and as for the atrocious dialect of those flippin' bluejays. . ! But you know well enough what they are telling you. Words that reflect on one's ancestry and legitimacy sound about the same in crow as in any other language. From the magpies you catch phrases like "no-neck google-eyes" and "Joe Whoo-oo?" while the blue jays just dance in along a limb as close as they dare and go "Yah-a-ah, ya-a-ah, yah".

You are fuming insisde, but you keep your cool, and make no reply to their insults and rude behavior except for loudly snapping your bill when a sassy jay gets in real close. You know they are too chicken to harm you physically, but psychologically they are hard to take. You don't know which is worse, the black, coarse humor and name-calling of the crows, the maddening jibes of those scatterbrained magpies, or the mindless fun-poking of the blue jays. And every time any one of them scores a good crack at your expense, the whole caboodle laugh it up like demented maniacs.

By this time quite a crows has gathered. There are at least six crows, twice that many magpies, and it sounds like half a hundred blue jays, but there are probably no more than six of them. A pair of gray jays have also joined the assemblage, but for the most part they have little to say, and they stay back a bit as though they had only called in at the party from a sense of duty and would be leaving shortly. A few sightseeing chickadees are tree-hopping and chirping circles around you, but you pay them little heed. Nor do you pay much attention to the nuthatch who traipses jerkily and head first down the tree toward you, or to the bevy of blackbirds that are quietly looking on from some trees farther back. But you can't ignore those others. They are Bedlam in feathers.

Your inner urge is to fly -- to get out and get away -- anywhere. But you have tried that before, in your younger, more inexperienced days, and it just doesn't work. It exposes you to full view, feeding the excitement of your tormenters, any one of which can outmanouver you in the air, and they will follow you no matter where.

So you close your eyes and pretend to sleep. Now, if you could only close your ears. . .

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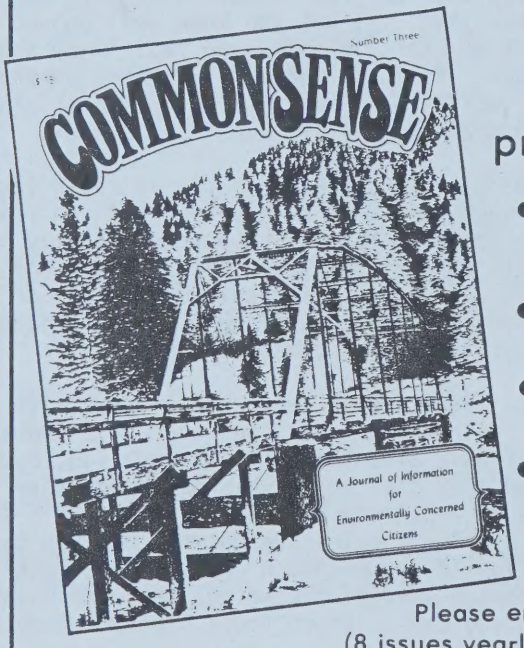

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